

# RAFAEL GRASSETTI

We discover what makes this Brazilian born self-taught artist 'tick', as we peruse the portfolio and delve into the life of Rafael Grasseti!



## INTERVIEWS

Rafael Grasseti & Jure Zagorichnik



## ARTICLES

Vancouver Film School & Maxon BodyPaint in 'The Incredible Hulk'



## GALLERIES

Volkan Kacar, Nicolas Collings, Stephen Cooper, plus more!



## MAKING OF'S

'Pursuit of Perfection' by Jesse Sandifer, plus more!



## TUTORIALS

NEW: Texturing & Lighting Mega Tutorial Series – Part One







## EDITORIAL

Welcome to Issue 36  
– August 2008. You'll discover this month that we're going to witness the finale of our Beginners Guide to ZBrush tutorial series. But we're certainly going out on a high with this one, as Wayne Robson has sneakily been filming the progress

of his tutorial in a dark cupboard somewhere in the UK, and he posted the movie to us last week for me to give away to you guys – for free – for all of you who've been following the ZBrush series! See PAGE 92 for the final instalment from Wayne for this series, and click on the "View Movie" download icon to get your mitts on the movie which accompanies this fantastic series. And as one series ends, another tutorial series begins – this time in the form of a mega 6-part tutorial series covering the complete creation of an aged and weathered scene, specialising in texturing and lighting! Richard Tilbury kicks off this new series with the first of 6 parts on the 'importance of references' (PAGE 86). Parts 1 – 3 are designed for artists to follow using any software versions, and parts 4 – 6 will be split up into our favourite 3ds Max, Maya, Cinema 4D, LightWave and Softimage XSI versions for some interesting and varied results from each of our talented tutorial artists. We will welcome back some old faces for Cinema 4D and XSI versions of this series, and we'll introduce some new faces for both Maya and LightWave, so stay tuned over the next 6 months to follow the complete creation of an aged and weathered scene! In fact, why not grab yourselves a 6-month subscription today, to make sure you don't miss out on any of this new series? You'll save money *and* learn how to create a 3D image from scratch, all over the course of just 6 months. Enjoy this month's issue! ED.

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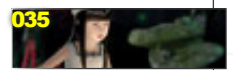
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## RECRUITMENT

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Wherever you see this symbol, click it to download resources, extras and even movies!!

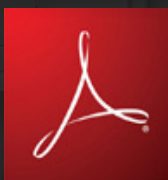






# Get the most out of your Magazine!

If you're having problems viewing the double-page spreads that we feature in this magazine, follow this handy little guide on how to set up your PDF reader!



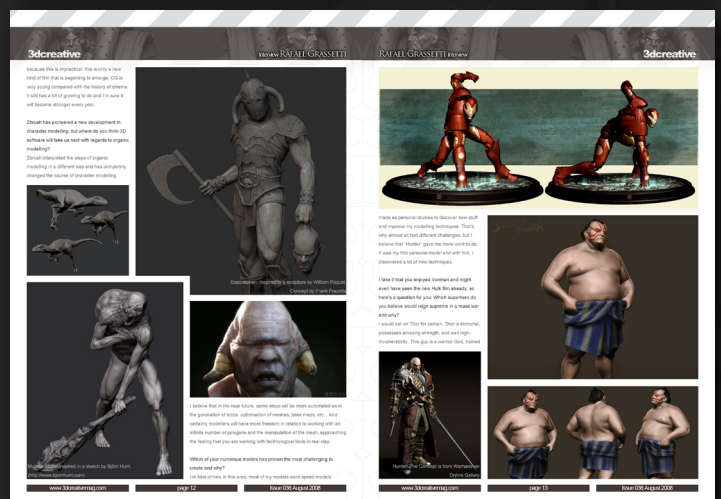
## SETTING UP YOUR PDF READER

For optimum viewing of the magazine, it is recommended that you have the latest Acrobat Reader installed. You can download it for free, here: [DOWNLOAD!](#)

To view the many double-page spreads featured in 2D Artist magazine, you can set the reader to display 'two-up', which will show double-page spreads as one large landscape image:

1. Open the magazine in Reader;
2. Go to the **VIEW** menu, then **PAGE DISPLAY**;
3. Select **TWO-UP CONTINUOUS**, making sure that **SHOW COVER PAGE** is also selected.

That's it!





# CONTRIBUTING ARTISTS

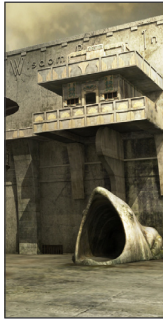
Every month, many artists around the world contribute to 3DCreative Magazine. Here you can read all about them! If you would like to be a part of 3DCreative or 2DArtist Magazines, please contact

[lynette@zoopublishing.com](mailto:lynette@zoopublishing.com)

## AGED & WEATHERED

### Concept to Render – The Creation of an Environment

The start of this new tutorial series sees Richard Tilbury tackle the opening three chapters. Richard will then hand over to our new tutorial artists; these wonderful people will be responsible for creating the remainder of the series for 3ds Max, Cinema 4D, Lightwave, Maya & Softimage XSi!



## RICHARD TILBURY

Has had a passion for drawing since being a couple of feet tall. He studied Fine Art and eventually was led into the realm of computers several years ago. His brushes have slowly been dissolving in white spirit since the late nineties, and now, alas, his graphics tablet has become their successor. He still sketches regularly and now balances his time between 2- and 3D, although drawing will always be closest to his heart. <http://www.richardtilburyart.com>



## JURE ZAGORCNIK

Is a 3D Modeller and Texturer in Kamnik, Slovenia. He's been around computers since he was a kid, mainly playing games.

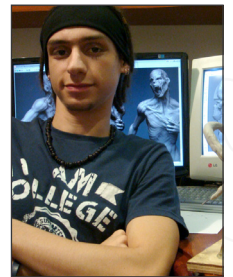
In 2003 he decided to give 3D a go and has been hooked ever since! He now works full-time in a web company, and as a 3D freelancer by night – kind of like a 3D superhero! In the future he sees himself continuing work as a freelancer.

<http://www.3dg.si>  
[info@3dg.si](mailto:info@3dg.si)



## RAFAEL GRASSETTI

Is a Brazilian artist born in 1988. He decided to study sculpture about 3 years ago, and when he discovered 3D he became fascinated with it. Since then he's been learning everything he can about art, and is a self-taught artist specialising in 3D modelling, character design, digital sculpting, texturing and assets for feature film and TV projects. <http://grassetti.cgsociety.org/gallery/rafaelgrassetti@gmail.com>



## WAYNE ROBSON

Is a very successful freelance digital sculptor living in Durham, England. Wayne is currently dividing his time

between work on an upcoming creature documentary and his upcoming extensive book on ZBrush for Wordware publishing. Wayne's best-selling DVDs on ZBrush and Mudbox are available through Kurv Studios.

<http://www.dashdotslash.net>  
[wayne@dashdotslash.net](mailto:wayne@dashdotslash.net)

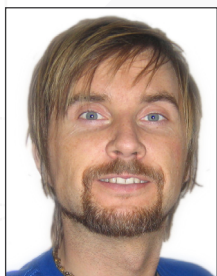


## WALDEMAR FAST

Is a freelance Character Animator from Germany. During his studies at the Filmakademie Baden-Wuerttemberg, he was already working on several international feature and commercial projects, and he is now working mainly as a Character Animator in traditional 2D and 3D animation for features and commercials. <http://www.fastanimation.de>  
[info@fastanimation.de](mailto:info@fastanimation.de)



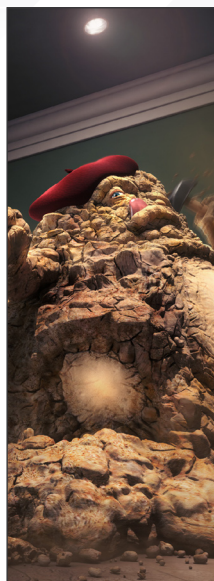
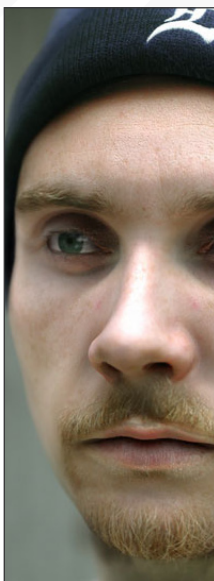




## ROBERT KUCZERA

Is a very successful Character Animator living in Munich, Germany, working mainly as a Character Animator for feature films and commercials in Germany and the UK, for companies such as Framestore and The Mill. Besides teaching, Robert has also just published an animation DVD for Gnomon Workshop, called "Intuitive Animation".

<http://www.3dcharacters.de>  
[contact@3dcharacters.de](mailto:contact@3dcharacters.de)



## JESSE SANDIFER

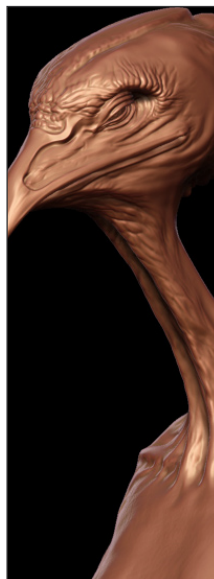
Is a self-taught digital artist with 8 years experience. He co-owns Green Grass Studios in Dallas, Texas, which works on a variety of projects for films, games, television, commercials and in-game arena entertainment. Most of his spare time is spent participating in online challenges, doing personal artwork and dabbling with drawing and traditional sculpting.

<http://www.jessesandifer.com>  
[jessesandifer@gmail.com](mailto:jessesandifer@gmail.com)



## GIRAFFE

Elif, aka "Giraffe", studied her University degree in architecture. She later discovered her passion for CG and switched to the CG world, aiming to become a CG artist. She has never had the chance to attend a CG school or course, so is trying to learn everything on her own. She loves learning new things and this never ends in the CG world! <http://www.giraffe3d.com>  
[giraffe3d@gmail.com](mailto:giraffe3d@gmail.com)



## MAGDALENA DADELA

Is a character artist from Poland and a Vancouver Film School graduate. She is best known for realistic character sculpture and anatomy studies. At present, Magdalena is part of Ubisoft's Digital Arts studio in Montreal, Canada, where she has contributed to various cinematic projects on titles like Assassin's Creed, Tom Clancy's End War and Far Cry 2. <http://www.mdadela.com>  
[magda.dadela@gmail.com](mailto:magda.dadela@gmail.com)



## DALTON ALVES MUNIZ

Is a freelance artist who has worked with some great agencies and productions in Brazil as an Illustrator, Modeller and Art Director, working on the likes of storyboards for TV commercials and illustrations. He is now focusing on games and characters, using programmes like XSI and ZBrush, and using his 2D skills in his 3D art.

<http://daltonmuniz.wordpress.com/>  
[dalton\\_muniz@yahoo.com.br](mailto:dalton_muniz@yahoo.com.br)



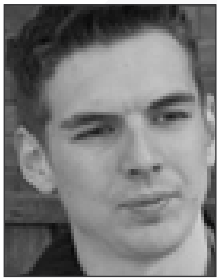
## JARROD HOLLAR

Was born in Austin, Texas, and graduated in 2003 from the Savannah College of Art & Design with a BFA double major in Painting and Art History. ZBrush is his sculpting application of choice, but he is also comfortable with 3ds Max modelling, Photoshop texturing and painting concept art in Corel Painter. He is currently looking for work in the video game/film industries.

[jarrod.hollar@gmail.com](mailto:jarrod.hollar@gmail.com)







## JOSEPH HARFORD

Has been an avid artist since childhood.

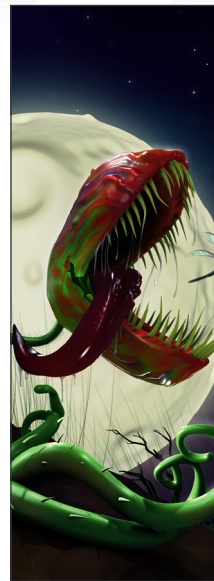
After freelancing in advertising and film he started in the games industry at Crytek

GMBH, the German games company behind Farcry and Crysis. After 3 years he left in order to expand his own freelance company, ShineFX.

Joseph now works as a Senior Character Artist at Ubisoft Reflections in Newcastle, England.

<http://www.shinefx.net/>

[Josephharford@googlemail.com](mailto:Josephharford@googlemail.com)



## AL-HAITHAM JASSAR

Is a 22-year old freelance Illustrator who has been working with digital media since late 2006.

He's totally self-taught, but he does have a background in traditional art. He hopes to one day have the chance to illustrate book and magazine covers, and then move on to work with a big studio.

<http://www.jassarbrush.com>

[alhaithamujassar@yahoo.com](mailto:alhaithamujassar@yahoo.com)

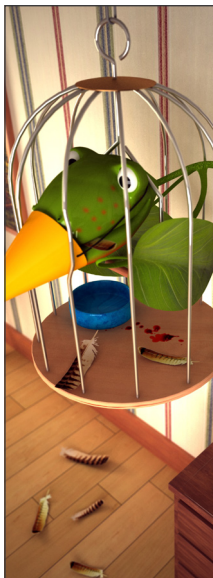


## ETIENNE FRAISSE

Studied electronics, but creating 3D pictures quickly became a real passion for him. Completely self-taught, he has

learned 3D simply by reading many books and tutorials on web sites. He is now a freelance 2D/3D computer graphic designer who prefers to create "unusual objects", cartoon characters, and likes to try his hand at photorealistic scenes.

[etienne.fraisse@wanadoo.fr](mailto:etienne.fraisse@wanadoo.fr)



## WOULD YOU LIKE TO CONTRIBUTE TO 3DCREATIVE OR 2DARTIST MAGAZINE?

We are always looking for tutorial artists, gallery submissions, potential interviewees, Making Of writers and more! For more information, send a

link to your work here: [lynette@zoopublishing.com](mailto:lynette@zoopublishing.com)



## THORBEN NOVAIS SILVA JENSEN

Was born in Germany; originally a Fine Art graduate who later became interested in 3D whilst

living in Brazil, where he took his first course in 2006. Since then he has been working to perfect himself, whilst freelancing in the area of architectural rendering. His main goal is to enter the games industry as a Character Artist.

<http://www.thorben.carbonmade.com>

[thorben7@gmail.com](mailto:thorben7@gmail.com)



Image by Rafael Grassetti

"I WOULD LOVE TO WORK ON HEROES LIKE HAWKMAN, GREEN LANTERN, AQUAMAN, BLACK PANTHER, THOR, ELECTRO, RHINO ETC. FOR SOMEONE WHO LOVES COMICS, WORKING ON A CHARACTER THAT YOU KNOW AND LOVE WOULD BE AN AMAZING OPPORTUNITY"

# RAFAEL GRASSETTI

Rafael Grasseti specialises in 3D modelling and is an avid fan of comics and superheroes. He has combined his love of classical sculpture, comics and Zbrush to produce a stunning array of life-like models based upon his passions.





# RAFAEL GRASSETTI

You state that you are a self taught artist specialising in 3D modelling. How did you come to discover Zbrush and 3dsMax and get interested in the realm of 3D characters?

I've always loved classical sculpture and comics, and when I started to learn more about film production, makeup and toy sculptures I became really interested and decided to try and pursue a career in the industry. When I started to study sculpting in clay, a friend of mine introduced me to 3dsMax. I got really excited about it and then when I got my hands on Zbrush as well, all my wishes were combined/ Today, I work hard to specialise in 3D modelling and I expect to grow further in this area.

What is it about character modelling / design that attracts you to the genre?

Creating a character is something that I think everyone loves. Even more so, when you are an artist. The feeling of creating a character and see it come to life is something that I



really enjoy; to have an idea and transpose it to a drawing and from a concept get the "real" character in 3D.

Seeing characters "come to life" is something often associated with creating a 3D version of a drawing. The next stage, off course, is to animate it and see it come to life even more. Is this an area that interests you at all?

One hundred percent. I've had the opportunity to

study all stages of production (modelling, rigging and animation) and it only increased my interest. I just become more focused on modelling because I identified with this part.

Why do you think many character modellers are attracted to creating 3D versions of comic book characters like Spiderman, Wolverine and Hulk?

I believe that all artists that come into this business are passionate about the comic book world. Almost all the artists I know share this passion and it's no different for me. Now that I have the chance to be a part of it and make my own versions of my favourite characters, I'm trying to do as much as I can. I'm really enjoying it and I hope to do a lot more in the future.

If you had the opportunity to work as the character modeller on a film that was based upon a comic book character who hasn't been brought to the silver screen yet, who would it be and why?

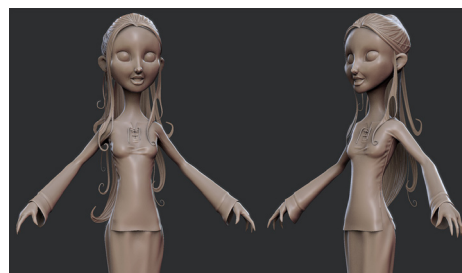
That would be a dream come true for me, and it would not necessarily need to be on the silver screen. Anything that I got the chance to work on relating to comics would be really great.



Most of my favourite ones have already been taken, but I would love to work on heroes like Hawkman, Green Lantern, Aquaman, Black Panther, Thor, Electro, Rhino etc. For someone who loves comics, working on a character that you know and love would be an amazing opportunity.

Which 3D characters or creatures have you found particularly successful in recent times either in film, television or games and why?

Today, I am impressed with the level of quality that companies are achieving in relation to 3D in general - especially in character creation. It is very difficult for me to cite a particular creature



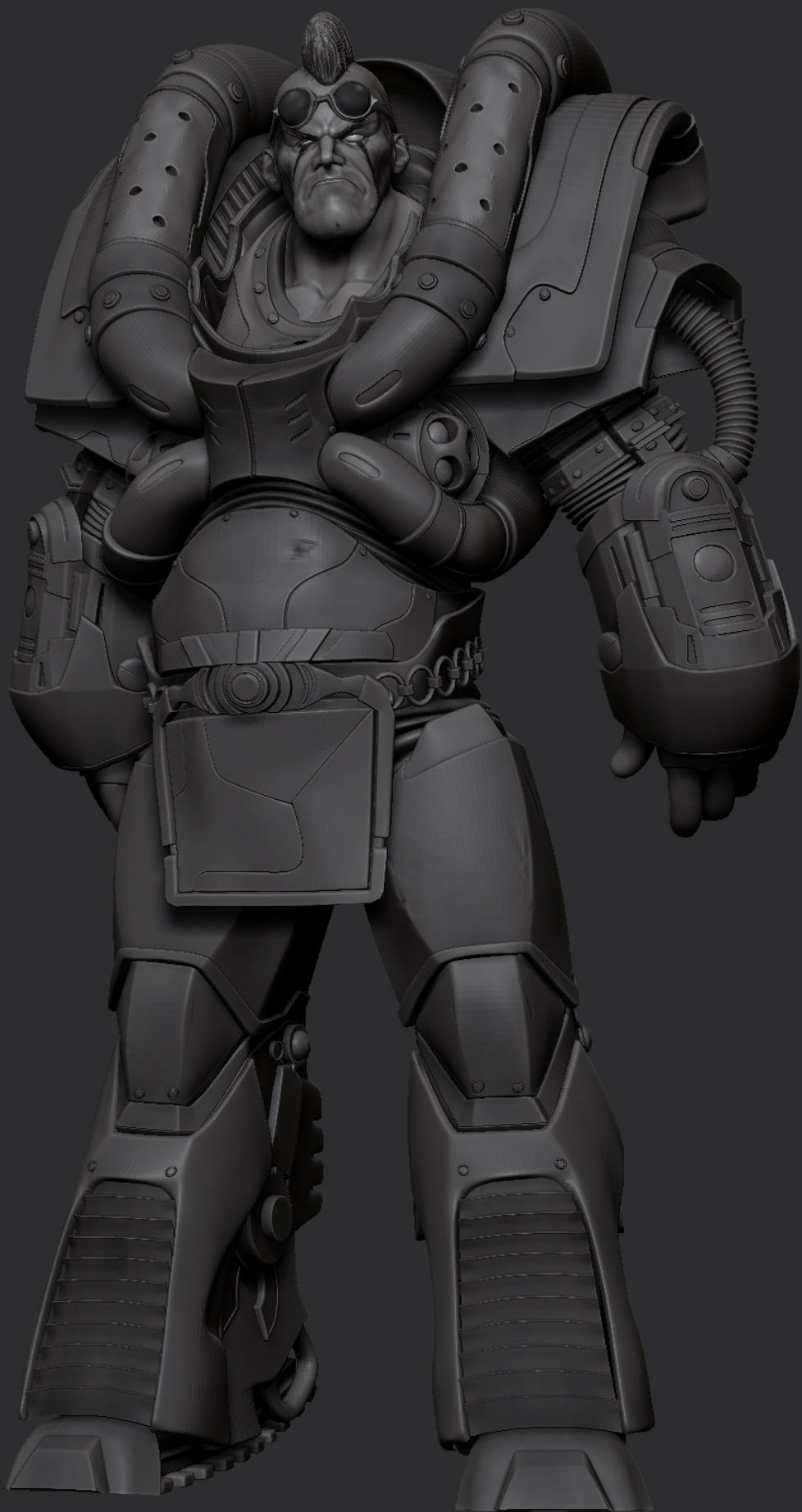
or character that I found successful in recent films because there are so many.

But of course I can name some that surprised and inspired me recently, like the new, outstanding Ironman, the vampires from *30 Days of Night*, Grendel from *Beowulf*, Marcus and Michael from *Underworld Evolution*, all characters from *The Chronicles of Narnia* and *The Golden Compass*, and so on.



You have mentioned *Beowulf*, which is a film where the characters are all composed through CG. Do you see this mimicry of real people as a valid form of film making, or do you feel CG should be used to represent what is too difficult or impossible to re-create in the real world? Anything is possible with 3D nowadays. Films that attempt to make films without real actors, like *Beowulf* or *Final Fantasy* are totally valid. This does not necessarily mean a complete replacement of actors by CG characters









Marine: model inspired by the Unreal Championship II concept art of Epic Games (James Hawkins)



because this is impractical; this is only a new kind of film that is beginning to emerge. CG is very young compared with the history of cinema. It still has a lot of growing to do and I'm sure it will become stronger every year.

Zbrush has pioneered a new development in character modelling, but where do you think 3D software will take us next with regards to organic modelling?

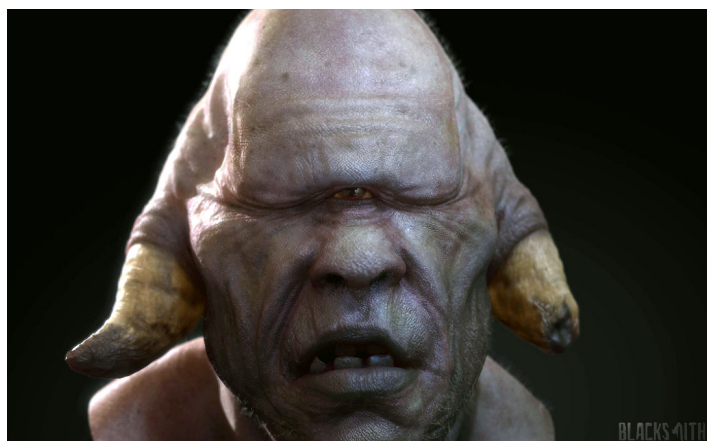
Zbrush interpreted the steps of organic modelling in a different way and has completely changed the course of character modelling.



Mutant Model inspired in a sketch by Björn Hurri.  
(<http://www.bjornhurri.com>)



Executioner: Inspired in a sculpture by William Paquet.  
Concept by Frank Frazetta



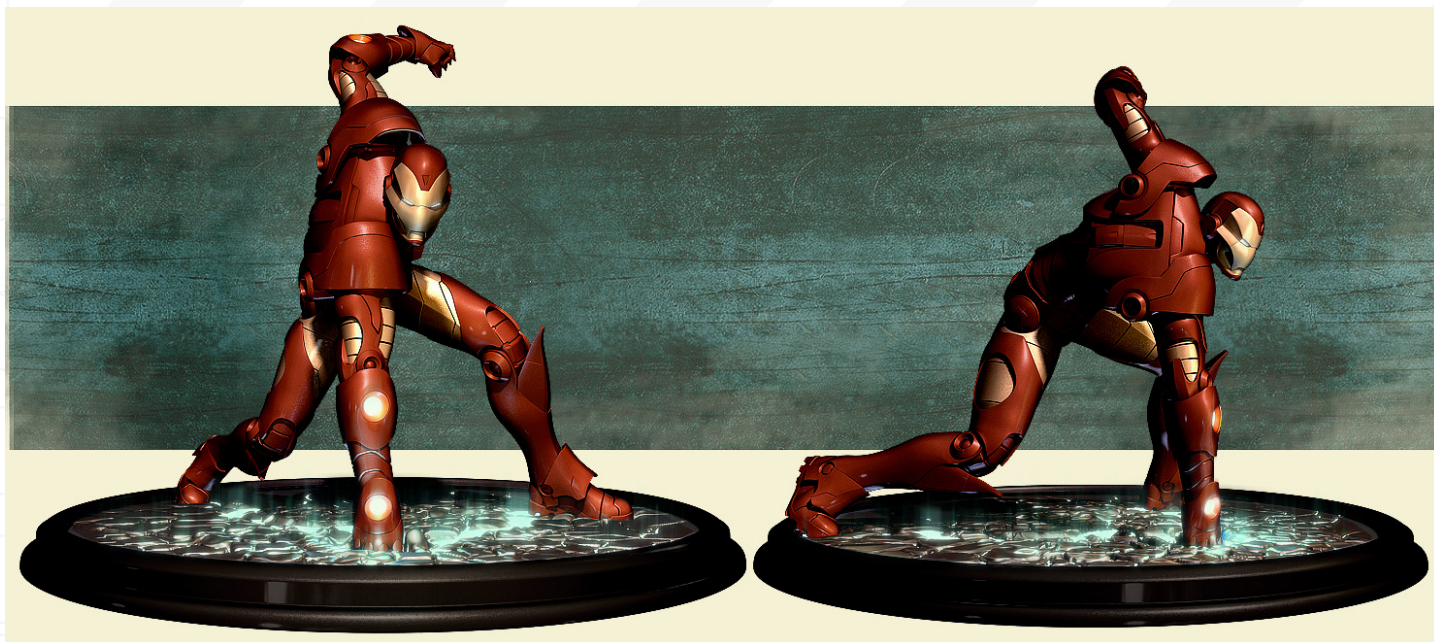
BLACKS-ATH

I believe that in the near future, some steps will be more automated as in the generation of loops, optimisation of meshes, bake maps, etc... And certainly modellers will have more freedom in relation to working with an infinite number of polygons and the manipulation of the mesh, approaching the feeling that you are working with technological tools in real clay.

Which of your numerous models has proven the most challenging to create and why?

I'm kind of new in this area; most of my models were speed models





made as personal studies to discover new stuff and improve my modelling techniques. That's why almost all had different challenges, but I believe that "Hunter" gave me more work to do. It was my first personal model and with him, I discovered a lot of new techniques.

I take it that you enjoyed *Ironman* and might even have seen the new *Hulk* film already, so here's a question for you: Which superhero do you believe would reign supreme in a mass war and why?

I would bet on Thor for certain. Thor is immortal, possesses amazing strength, and well nigh-invulnerability. This guy is a warrior God, trained



Hunter: The Concept is from Warhammer Online Gallery





and skilled in the art of battle, and he's been doing it for countless ages. He has a mystical war hammer, and power over the earth and the elements. He's unstoppable - and my next CG model [Laughs].

And finally if you could pitch all of your characters together in a gladiatorial arena who would be the "last man standing" and why?

That would be fun to watch!

Most of my characters don't have the warrior profile, but I think Hunter and Gorge would be in the final and Gorge would defend the hunter shots and crush his head. But now that I have finished Ironman no one can defeat him!

## RAFAEL GRASSETTI

For more work by this artist please visit:

<http://grassetti.cgsociety.org/gallery/>

Or contact them at:

[rafagrassetti@gmail.com](mailto:rafagrassetti@gmail.com)

Interviewed by: Richard Tilbury

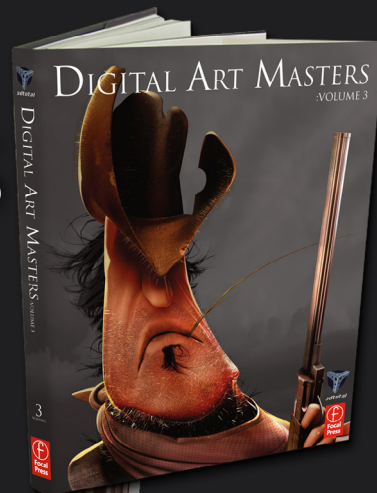




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By day he's a web developer and by night he's a modelling wizard.

We chat with Jure Zagoricnik about teaching himself 3D and why he would model his pet beagle over anything else in the world.

# JURE

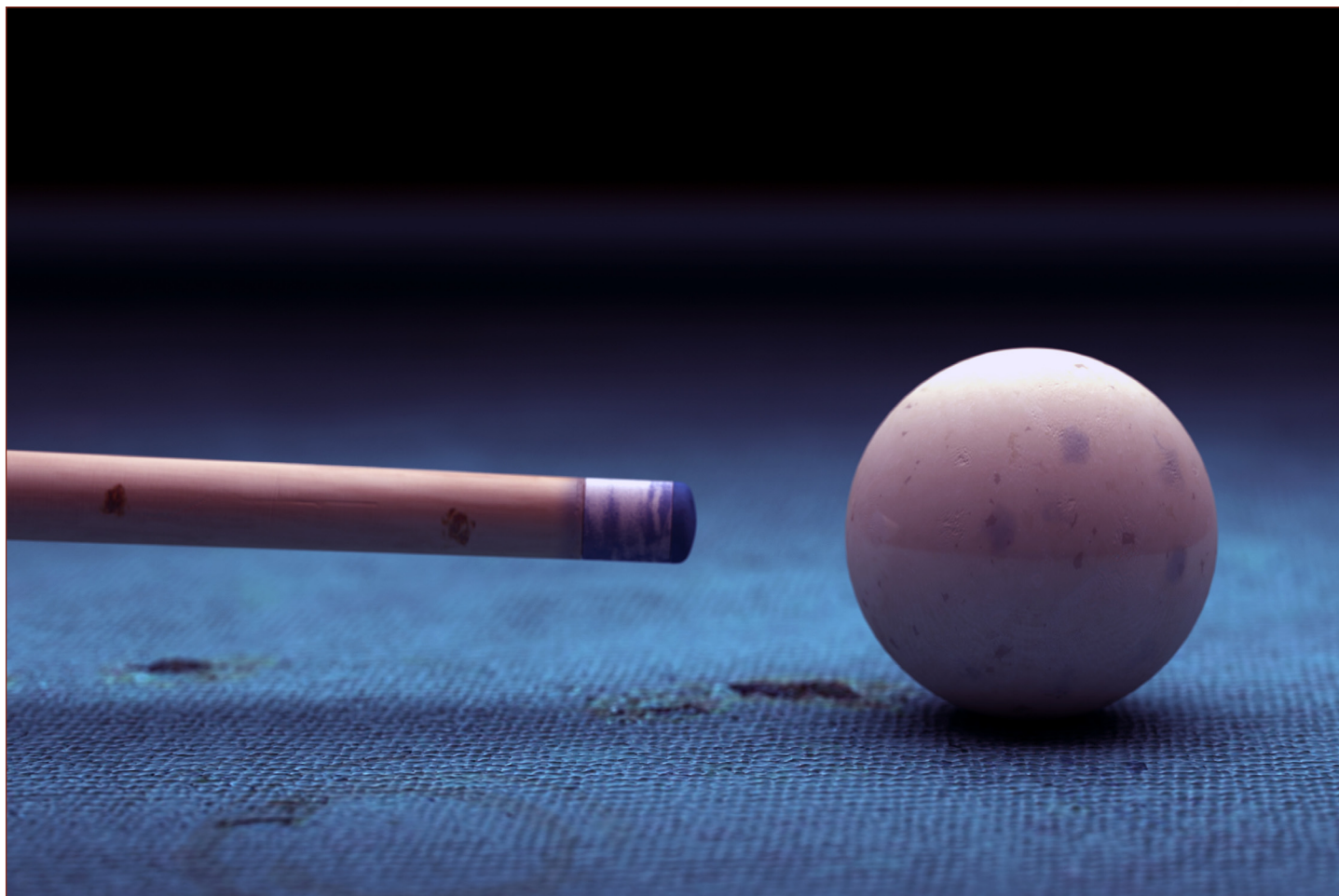
## ZAGORICNIK



# JURE ZAGORICNIK

Hi Jure! When did you first get into 3D, and what sort of schooling did you have?

Hey Chris. I took my first steps into the 3D world five years ago. My full time job is as a web developer, and back in 2003 we had this project that involved a wooden puppet. We had to make a flash game where this character would walk around and paint different objects. To help out our designer I decided to model the puppet, rig it and do some animations like walk cycle, different painting actions and so on. So basically this is what got me into 3D. I had to learn all three things in a short amount of time, but the end result was a surprise to everyone - it looked half decent! So from that point onwards you could say I was hooked. I didn't have any official









schooling; my teacher was the Internet. If I could point out two websites it would be 3DTotal and 3DBuzz. 3DBuzz and their video tutorials made learning fun with the two hosts (Jason and Zak) constantly joking around. So there I learned the basics about the program. For more advanced techniques I turned to 3DTotal and its detailed tutorials. If one is passionate about something it's not hard to learn.

You mentioned that the Internet was your teacher. With the whole 3D community becoming a better place to learn, and with the amount of training DVD's that are available, do you think that colleges and universities will become obsolete in the future?

I don't think so. You can learn a lot more a lot more quickly if you decide to take the "traditional" road like college or university. You learn from the best in the business there. I have a friend who just finished the Animation Mentor class and he said it was truly amazing. He's been in the animation business for quite a while now, but this class advanced his animation skills to another level. The downside of these classes is that they don't come cheap. Don't get me



wrong, they're worth every penny, but it's a big investment for some that they just can't afford.

You're currently working under the title of 3D Grafika. What made you decide to become a freelance artist rather than work in a studio?

As I said before, my full time job is a web developer. I do 3D part time - mostly at night, when I put my daughter to sleep. Why I don't work full time in 3D industry? Well firstly, I don't want to get tired and bored of 3D by looking at the polygons 24/7 and secondly, deadlines are

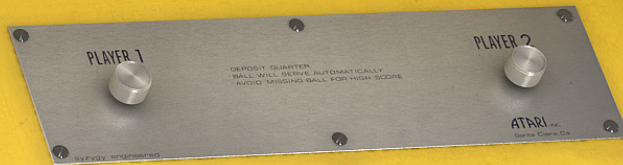
pretty sharp and I like to spend my free time with my family. By freelancing I can pick and choose the projects I like and I know they won't take up all my free time.

Your sense of realism is put across in such images as 'Vespa', Tennis Ball' and 'Stroke Me Gently' and it is apparent that you take this quite seriously. How long does it take you to achieve this look within your work?

Since my imagination isn't as vivid as I would like, I mostly get inspired by images on the



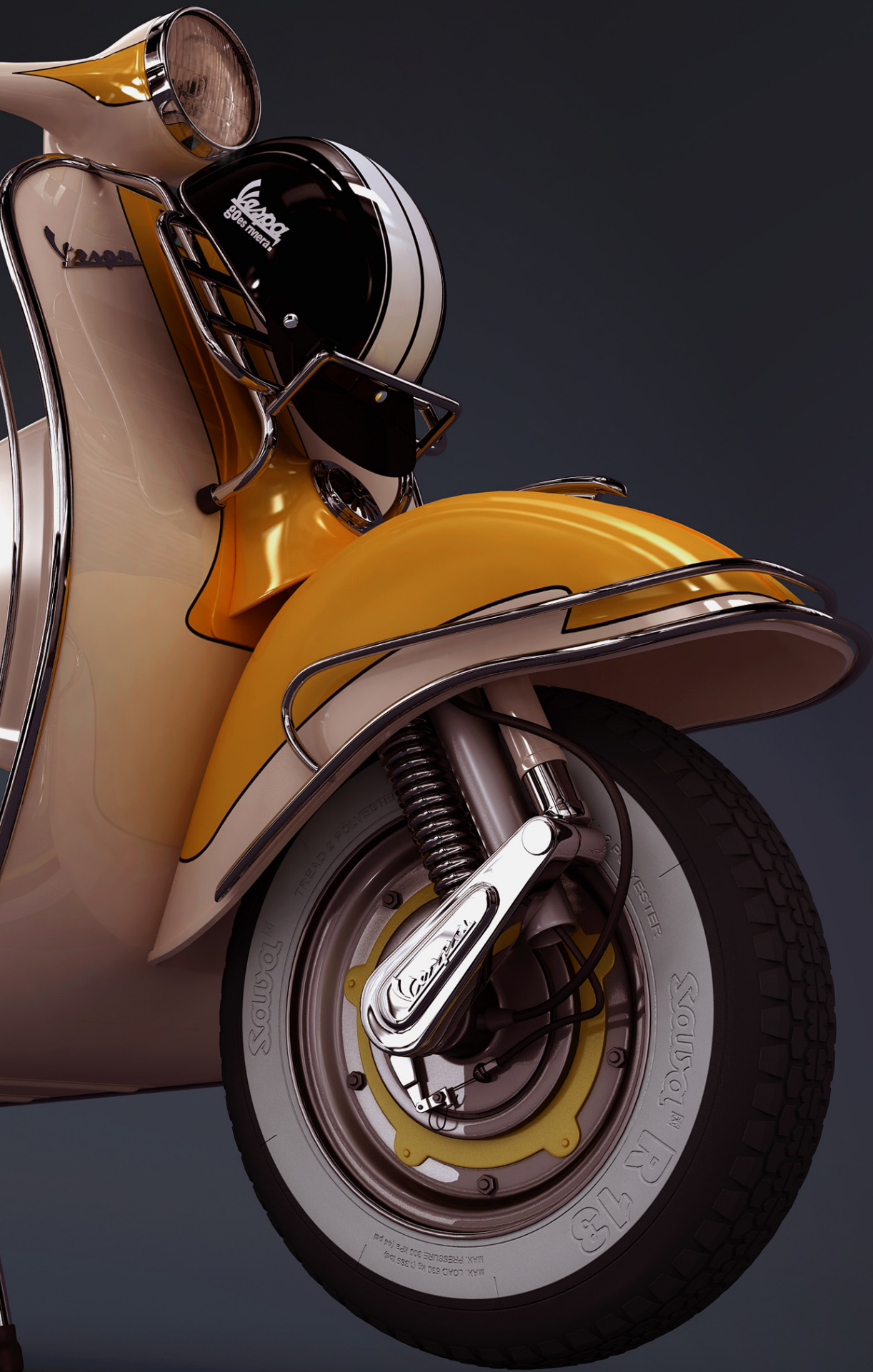
# PONG













Internet. "Vespa" was made for a website challenge and it took me a few weeks. The other two you mentioned were one or two projects, just to test different things like fur, depth of field, displacement...

**So do you have any 3D jobs on the go at the moment?**

I am doing some car renders right now for a Slovenian client. Nothing to really talk about. What I am more excited about is that I just recently found two guys here in Slovenia that are into concept cars and I told them that I would like to turn their concepts into a 3D model. So right now they are putting the sketches together and once we have that done, I do my part and try to give them that third dimension.

**You mentioned on your website that you've done some work for the *Saints Row* game. Could you tell us what was your involvement in the game and how the job came about?**

The game was developed by Tiburon and a Dutch studio called Streamline Studios (<http://www.streamline-studios.com/>), who contacted me to see if I would be interested in doing assets for the game. 90% of the time



I was doing architectural stuff (dilapidated old buildings, train station, suburban houses, chop-shop...) and props here and there (guns, clothes, night club props...). They would send us a picture and a file with a placeholder in place and my job was to model and map the objects using the picture as reference. This project went on for almost a year and it was a real learning experience for me. All the guys at Streamline Studios were really kind and supportive; it was a pleasure working with them.

**Do you keep in touch with anyone at the studio and would you like to work for them again?**

I have a few of them on my ICQ contact list. I know they are busy guys so I don't bother them too much. If the opportunity came to work for them again, I am 90% sure I would say yes.

**So what are your plans for the future?**

I take it one day at a time. I am always open for freelancing and who knows, maybe if the right offer comes, I might get drawn into 3D full time.







So if you had the right offer, which company would you like it to be from and why?

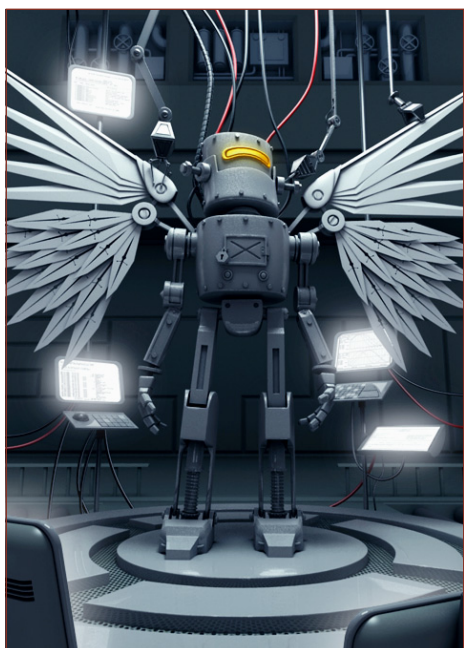
I don't have any favourites. I had a few offers from some big studios but they wanted me to work on site and at that time my daughter was only a few months old and I had to decline. I am not that big on moving across the pond. If I had to choose, it would be a studio here in Europe.

Having to sit in front of the computer screen all day is hard on your eyes as well as your back, so here in the office we sometimes take time out to play miniature basket ball or table tennis. What do you do to help break up the day?

When I was younger (I still am) I had tennis training for seven years and then volleyball training for another ten. So to relax I play both of them several times a week. Plus there is my soon-to-be four year old daughter Lia who keeps me on my toes at all times!

Thanks for talking with me Jure and I wish you and your family all the best for the future. One last question before we call it a day: Out of all the objects in the world which one would you like to model and why?

[Laughs]. Good one! Let think a bit. Okay, here it goes. It would be my dog. Her name is Buffy and she's a Beagle. Oh, those cute puppy eyes. One just can't say no to them. I would really like



to improve my organic modelling skills and that would be a great exercise. Maybe in the future I'll have a go at it. But I must really improve first. She is so pretty that I don't want to do her injustice!

Before I say my goodbyes I would like to thank you, Lynette and all the staff at 3DTotal for the great work you do. The web just wouldn't be the same without you!

## JURE ZAGORICNIK

For more work by this artist please visit

<http://www.3dg.si>

or contact them at

[info@3dg.si](mailto:info@3dg.si)

Interviewed By : Chris Perrins



MAXON BodyPaint helps Rhythm & Hues  
unleash its creative power on the feature film,  
*The Incredible Hulk ...*

# THE INCREDIBLE HULK

“USING BODYPAINT 3D, I  
COULD PROJECT ALL THE  
REFERENCE MAPS FOR WHERE  
THE DAMAGE NEEDED TO BE  
ON THE MODEL AND THEN  
PAINT/PROJECT THE DAMAGE  
ONTO THE AREAS OF THE BODY  
WHERE IT WOULD NORMALLY  
BE DIFFICULT TO PAINT, SUCH  
AS THE ELBOW, HEEL, AND SIDE  
OF THE TORSO”

“The Incredible Hulk” TM / © 2008 Marvel - Images courtesy Rhythm & Hues.



# THE INCREDIBLE HULK

Award-winning visual effects and character animation studio adopts BodyPaint 3D into the state-of-the-art production pipeline to meet the rising demand for realism and complexity in 3D paint and textures.

MAXON Computer, a leading developer of professional 3D modelling, painting, animation and rendering solutions, announced that Rhythm & Hues (R&H), one of Hollywood's premiere visual effects and animation powerhouses, turned to MAXON's BodyPaint 3D to address a myriad of complex texture painting challenges associated with the creation of central scenes and characters in the recently released Universal Pictures feature film, *The Incredible Hulk* (Hulk) – most notably, The Hulk's distinctive muscle-popping green skin.

Based on the Marvel Comics superhero created by Stan Lee and Jack Kirby, the movie tells



First pass Hulk URpants

Side by side comparison of concept art and jeans that were projection painted in BodyPaint 3D. "The Incredible Hulk" TM / © 2008 Marvel - Images courtesy Rhythm & Hues.

"The Incredible Hulk" TM / © 2008 Marvel - Images courtesy Rhythm & Hues.

the story of scientist Bruce Banner, who is desperate to find a cure for the radiation that poisoned him and lets loose the rage within him that transforms him into The Hulk. Animators at R&H took advantage of MAXON BodyPaint 3D's speed, agility and intuitive processes to quickly create the complex and dynamic effects necessary to bring the story to life. In all, Rhythm & Hues worked on 234 shots. A team of eight texture artists used MAXON BodyPaint 3D primarily to paint and texture The Hulk and his nemesis, The Abomination, in addition to painting props and portions of buildings and environments.

"We're committed to using the best software that will allow us to quickly and efficiently produce the highest quality texture maps, and BodyPaint 3D is number one," said David Perkins, technical support supervisor at Rhythm & Hues.



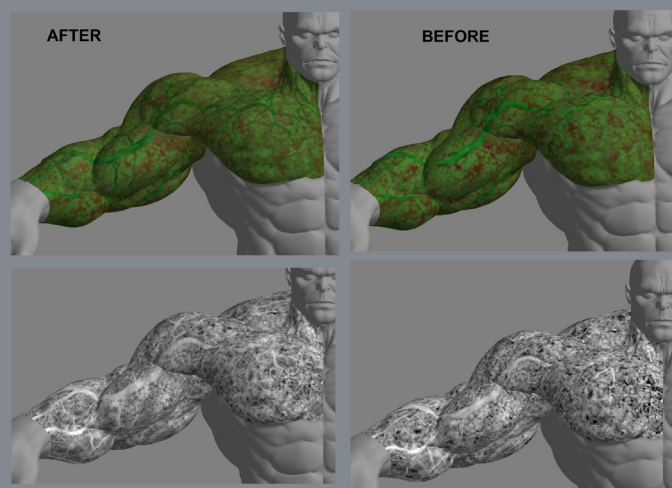


"The Incredible Hulk" TM / © 2008 Marvel - Images courtesy Rhythm & Hues.

R&H features a state-of-the-art production pipeline made up of a balanced mix of proprietary and off-the-shelf software. According to Sarah Kym, a lead texture painter at Rhythm & Hues, a 3D paint and texture package needs to be smart and adaptable, and BodyPaint 3D more than fits the bill. "BodyPaint 3D's tools make us more efficient. Examples include the Clone tool, the ability to hide surfaces to get around tight spots, multiple cameras, and layer effects. It makes me very happy when I see a tool that can cut my paint time in half."

Kym, who has also seen an increasing demand for realism and complexity in 3D paint and textures in the past several years, along with an explosion of technology to meet the new challenges, when on to note, "We're constantly pushing for bigger and better effects and packages like BodyPaint 3D have helped us get to that next level."

SMASH-HULK - (VEINS INTENSE!!!! (SUBSURFACE IN PROGRESS!!!!) 3-26-07 SKYM



"The Incredible Hulk" TM / © 2008 Marvel - Images courtesy Rhythm & Hues.





Additional BodyPaint 3D tools and capabilities deemed particularly useful to the R&H team while working on *The Incredible Hulk* included its extra large texture map capacity, customisable user interface, Raybrush technology and projection painting.

MAXON BodyPaint 3D's interactive, real-time capabilities proved particularly invaluable to the R&H team when they were faced with creating a wide array of highly complex action shots, including the story's signature metamorphosis of Bruce Banner into The Hulk. For this critical transformation sequence MIG (Muscle Influence Group) maps were created in BodyPaint 3D, enabling lighting specialists and animators to control how the muscles rippled under The Hulk's skin.

"Every material group had multiple maps with each group to influence small sections of muscle," Kym explained, "and they had to match within the material and across other materials. It was a crazy puzzle that had to fit as perfectly as possible so that we didn't end up with weird ridges or bunched-up muscles. I'd load 10 or 15 layers of maps per material group into BodyPaint 3D so that I could visualise how they were lining up, and then seam them or add or subtract them as needed. I was so happy that I could keep loading them in. I kept waiting for BodyPaint 3D to crash, but it didn't!"

Additional key scenes that developed with the help of BodyPaint 3D included The Hulk coming under heavy weapons fire and both The Hulk and The Abomination demolishing vehicles. The weapons fire scene required painting different types of "damage" onto The Hulk's body – including wounds, dirt and scrapes. Aaron Skillman, a lead texture painter







"The Incredible Hulk" TM / © 2008 Marvel - Images courtesy Rhythm & Hues.

at Rhythm & Hues, explained, "Using BodyPaint 3D I could project all the reference maps for where the damage needed to be on the model and then paint/project the damage onto the areas of the body where it would normally be difficult to paint, such as the elbow, heel, and side of the torso."

Crafting the destruction of a Hummvee and motorcycle was equally challenging, "These 3D props were complex and highly detailed," Skillman noted. "BodyPaint 3D handled the textures and all the maps necessary to paint them in the detail and in the 4K resolution we needed for these scenes."



"The artists at Rhythm & Hues did an outstanding job of using BodyPaint 3D to create the wide array of complex textures and painted surfaces that comprise much of *The Incredible Hulk's* core graphic elements," said Paul Babb, president and CEO, MAXON USA. "Rhythm & Hues' positive experience using the software on Hulk underscores MAXON's commitment to developing critical and intuitive 3D content creation tools that enhance digital production workflow and allows artists to quickly create highly detailed and accurate texture maps."

MAXON BodyPaint 3D has been an integral part of the R&H production pipeline for the past 18 months, and Hulk served as an important stepping-stone in the artist team's familiarisation and adoption of the product. The studio is currently using BodyPaint 3D on several upcoming films, including *Mummy 3*, *They Came from Upstairs*, *The Fast and the Furious 4* and *Land of the Lost*. R&H is currently evaluating MAXON's leading 3D animation software, CINEMA 4D, and Projection Man – a tool that makes it fast and easy to create digital environments.



## ABOUT RHYTHM & HUES

One of the world's leading producers of visual effects and animation for movies and commercials, Rhythm & Hues, founded in 1987, has contributed to more than 115 feature films, including *Babe*, which won an Oscar in 1995 for Best Visual Effects. The studio has also been the recipient of three Scientific and Technical Academy Awards. Recent productions include *Alvin & the Chipmunks*, *Evan Almighty* and *Night at the Museum*. Currently in production at Rhythm & Hues are *The Mummy: Tomb of the Dragon Emperor*, *They Came from Upstairs*, *Cirque du Freak*, *Land of the Lost*, *State of Play*, and *The Time Traveler's Wife*. More info can be found at: <http://www.rhythm.com>

## ABOUT MAXON COMPUTER

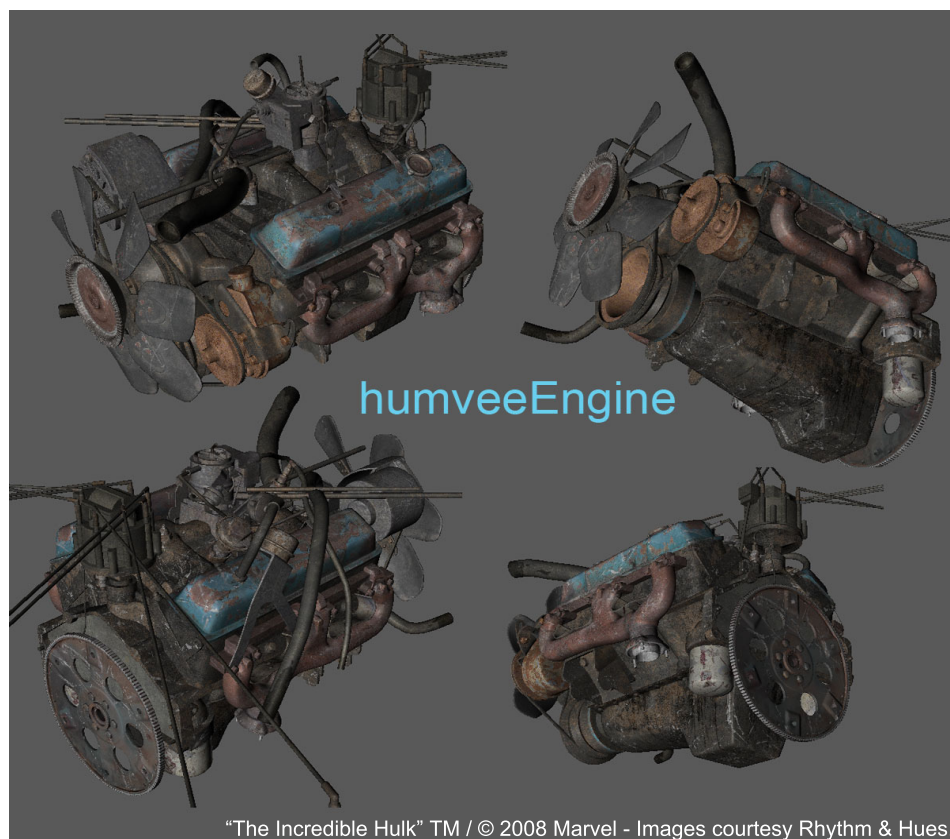
MAXON Computer is the developer of professional 3D modelling, painting, animation and rendering solutions. Its award-winning products have been used extensively in the film, television, science, architecture, engineering and other industries. MAXON products have



"The Incredible Hulk" TM / © 2008 Marvel - Images courtesy Rhythm & Hues.

been used for and in *The Golden Compass*, *Beowulf*, all three *Spider-Man* films, *Surf's Up*, *Fantastic Four: Rise of the Silver Surfer*, *Ghost Rider*, *Open Season*, all three *Pirates of the Caribbean* films, *Monster House*, *Eragon*, *Superman Returns*, *The Chronicles of Narnia: The Lion, the Witch, and the Wardrobe*, *Serenity*, *War of the Worlds*, *Polar Express*,

*The Flight of the Phoenix*, *Van Helsing*, *King Arthur*, *Star Wars: Episode II - The Attack of the Clones*, the On-Air Packages for TMZ T.V., Comedy Central, Monday Night Football, Jeopardy, Wheel of Fortune, ESPN, NFL Network, TIVO, NBC, DirecTV, CBS NFL, Fox and many more. MAXON has offices in Friedrichsdorf (Germany), Newbury Park (CA, USA), Bedford (UK), Tokyo (JP) and Paris (FR).



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## THE INCREDIBLE HULK

For more information please visit:

[http://www.maxon.net/frm/02391\\_02391.html](http://www.maxon.net/frm/02391_02391.html)

Or contact:

[info\\_us@maxon.net](mailto:info_us@maxon.net)

Article courtesy of: MAXON Computer, Inc.

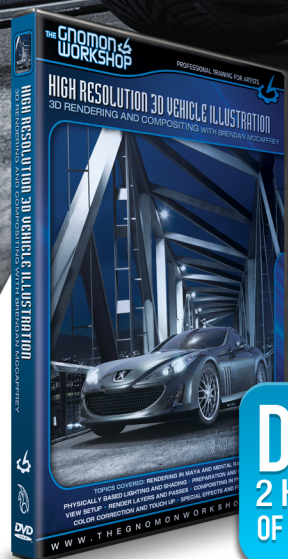
Story adapted from an article written for MAXON by Audrey Doyle



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ONLY THE ANIMATOR CAN  
SEE WHAT IS NATURAL AND  
BELIEVABLE AND APPLY IT  
TO THE COMPUTER. IT ALL  
BOILS DOWN TO THE  
"ILLUSION OF LIFE".



VFS is the No.1 rated Animation School in Canada, and if that's not credit enough it is also home to the No. 1 rated One-Year Animation Program in the entire world! This month we chat to Head of Animation, Larry Bafia, to find out just what makes VFS so special, and what budding animators can gain from their One-Year Animation Program. Read on to find out!





Hi Larry! So as the head of the Animation programme at the No. 1 rated Animation School in Canada, and – as listed by 3D World – with the No. 1 rated One-Year Animation Program in the whole world, can you tell us a little about the programme itself? How was it founded and how has it progressed over the years to what we find today?

Thank you, Lynette. As a film school, VFS saw the need for a program that covered the rapidly expanding worlds of animation and visual effects. The school started with a 10 month Alias Power Animator course which eventually evolved into the 12 month course which delves into XSI and Maya. We also offer a one year course in Classical Animation that covers both Toon Boom and Flash, as well as a six month Digital Character Animation course in Maya.

With so much software available these days, how do you keep yourselves on top of the game, and what was the decision behind employing



Maya and XSI as your software of choice? What advantages do these programmes have over the other industry-used software?

It takes a team effort by the entire faculty to cover all of the software nuances. We rely on some beta testing as well as all of the information we receive from the manufacturers. As far as software choices, we look at the industry trends and try to strike a balance. Our goal is to teach 3D methodology, not just shortcuts in any particular software.

So who is the One-Year Animation programme aimed at exactly, and how easy/difficult is it for



interested applicants to apply and become a part of the Animation programme? Are there many entry requirements for applicants, and how does the cost of the course compete with other four-year animation programmes out there?

The program is mainly aimed at students that want to immerse themselves in the discipline and become marketable as soon as possible. We look for individuals that are well organized and have developed a portfolio that reflects a good sense of aesthetics and confidence. We look for drawings, photography and any previous 3D work. We're basically interested in the individual's "eye".

The best way that we can compete with a four year programme is to make our students "industry ready". By that I mean we are not exclusively teaching software, but through our projects we are also giving the students a better understanding of the production process. The best feedback I can get from a studio is that our graduate was ready on day one of their new job in production. It's an expensive proposition for a studio to take a risk on an entry level artist. As far as cost goes, if you're earning a pay check for three years while others are still paying tuition and attending school, you'll consider a one year immersion as a good deal.

Sounds like a good deal to me and certainly a wise move, especially if, as you say, your students come out of the one-year all ready and prepared for a hard day's work! With regards to preparing a portfolio of work, do you have any suggestions as to the amount of samples an applicant should put together? For instance, how many examples of photography, drawings, 3D work would you ideally like to see? Also, do you believe that life drawing is important in this field?

Quantity really isn't the issue. By saying that we are interested in the individual's "eye" we're not merely evaluating that particular example in the portfolio, but whether the person is making conscious decisions as to what, in their mind, constitutes quality work. A good animator is also a good editor. Life drawing is definitely important. Most major studios offer life drawing





sessions to their employees. I have sat next to many TDs and other "technical" artists in sessions at PDI/Dreamworks.

Looking at your alumni credits, I can see that graduates from the One-Year Animation programme have gone on to work on the likes of *The Lord of the Rings*, *Iron Man*, *Battlestar Galactica*, *The Chronicles of Narnia*, *The Incredible Hulk*, *The Golden Compass*, *Transformers*, *Hellboy*... the list just goes on and on! So what makes VFS so different and so very successful in terms of its graduating students? I believe that we have very strong relationships with the film, television and gaming industries. The faculty and I have developed our own networks through years of working at various studios. These industry connections benefit our students. We also place a strong emphasis on the student developing a complete portfolio; meaning that they must go beyond the demo reel and offer an employer a mature, individual with depth. Once a studio recognises the talent and quality of workmanship in the program, they look for more 3D grads. We have many guest speakers from studios that take the time here to do a bit of recruiting.

Could you give us any examples of your guest speakers and which studios they visit from? I remember from my art university days that guest



speakers always had a huge impact on students and so this, to me, sounds really wonderful! I'd love to hear some of the names that you have giving talks.

We've had Rob Coleman from ILM, Michael Conelly from R&H, Hael Kobayashi from Animal Logic, as well as artists like Syd Mead and Michele Gagne. Ed Hooks has done an Acting for Animators workshop. Our VFS blog covers all of our guest speaker events.

Can you tell us a little about the current staff of your One-Year Animation programme, and also a little about your recent graduates?

Our staff come from various studio

backgrounds. Many of them have worked locally for Mainframe, Rainmaker, Image Engine, Radical and Electronic Arts, to name a few. We also maintain a part-time staff of instructors that are currently employed at studios around Vancouver. We are a very international school. Our graduates are spread throughout the world so we hear success stories from all corners. For example we have quite a number of grads in Singapore at Lucasfilm. Locally many of our grads have been picked up by Rainmaker for DVD and feature work. Quite a few visual effects grads are working in London and in LA. There are game companies all over the world that are employing recent 3D grads as well.













We actually had one of your previous students, Cesar Montero, write some tutorials for 3DCreative and we often hear lots of great stories from him – he seems to be travelling the world with his job now, having worked in both London and Vancouver since his graduation. It's always great to hear success stories! Are there any "big names" in the industry today that you can lay claim to having taught at VFS?

Many of the industry names are local, such as Shawn Walsh at Image Engine, Alistair McLeod at Nexxon and Jericca Cleland-Hura at Rainmaker. George Similski has directed at Nerdcorps as well as Lucasfilm. TJ Galda is CG Supervisor at Electronic Arts.

We have all been wowed by the stunning works of Max Wahyudi (<http://student.vfs.com/~3d68max/demoreel.html>), but are there any other graduates that we should be keeping a close eye on?

These days it is much easier to view our graduate's work and make contact. Besides the Showcase on our website, [www.vfs.com](http://www.vfs.com), we also maintain a huge channel of work on YouTube as well as other popular sites. We have a regular rotation of hundreds of recent pieces. Check it out!

Sounds great! As well as VFS.com and YouTube, what are the other most popular sites for animators to keep an eye on right now, to keep bang up-to-date with inspiration for their own projects?

Most students have a regular drill of checking CG Talk, AWN, AREA, XSI Base, etc. There is so much out there these days. We also try to encourage following trends in live action through Cinefex or the American Cinematographer.



What would you define as the single-most important characteristic of a successful animator in today's industry?

A successful animator is someone that is a great problem solver. That individual recognises the problem and keeps an open mind for the solution. The animator must be a good observer and consider everything as reference for their work. The computer alone is not going to make your animation better, only the animator can see what is natural and believable and apply it to the computer. It all boils down to the "Illusion of Life". Thank you Frank and Ollie!

Seems like a good tick-box situation for any budding animators to see if they have what it takes or have anything they need to improve on. It's always good to have goals, so thanks for giving us an insight into what you believe makes a successful animator! Finally, who are Frank and Ollie (please excuse my idiocy if this is obvious to everyone other than me – I have my stupid days!)?

Frank Thomas and Ollie Johnston were two chief animators at Disney during the period of some of the most classic Disney features such as *Snow White*, *Pinocchio* and *Fantasia*. They are part of the famous "nine old men" at Disney and are the authors of the animator's bible, "The Illusion of Life". <http://www.frankandollie.com/>



Ah, so I am stupid! [Laughs] Thanks for the interview Larry and may we all look forward to seeing the great works of many, many more VFS graduates in the coming months and years. Keep up the great work!

## LARRY BAFIA, HEAD OF ANIMATION AT VFS

For more information please visit:

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VFS student work by Zack Mathew



# THE GALLERY



This month we feature:

Volkan Kacar

Nicolas Collings

Alfonso Lourido

Max and Jade

Esam Darweesh

Piotr "hcpiter" Lusnia

Rodrigo Banzato

Stephen Cooper

Marco Antonio Delgado

Carlos R. Bisquertt





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# DINING ROOM

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## COLD BATHROOM

Piotr "hcpiter" Lusnia

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## ABANDONED ZONE

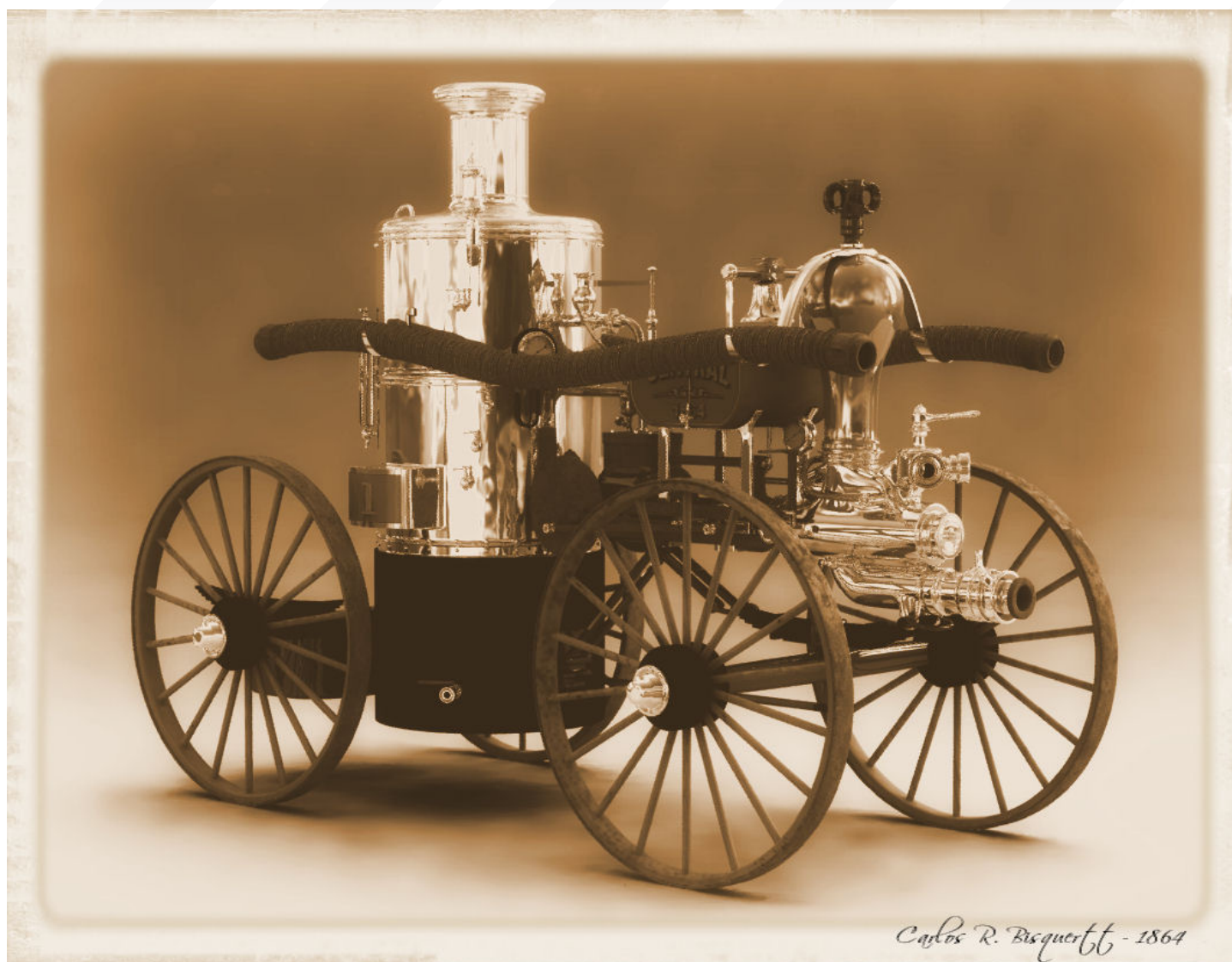
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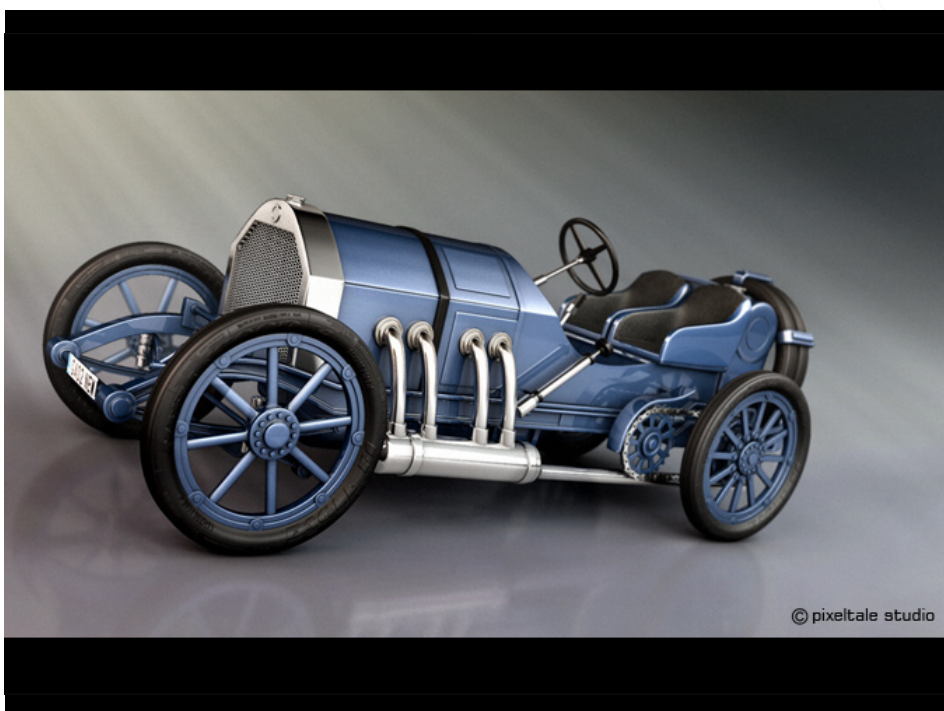




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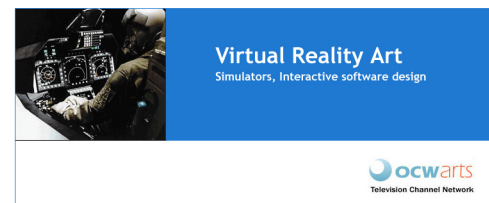
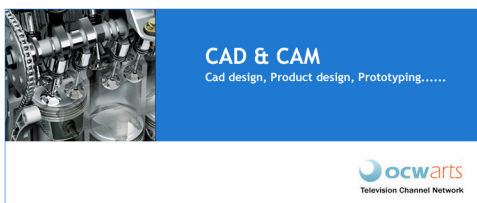
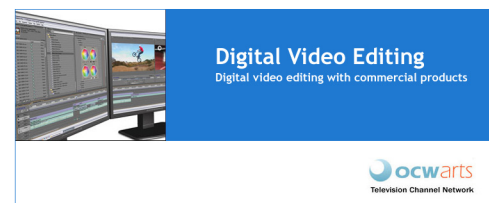
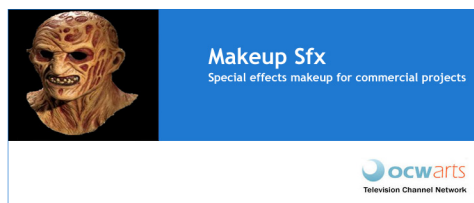
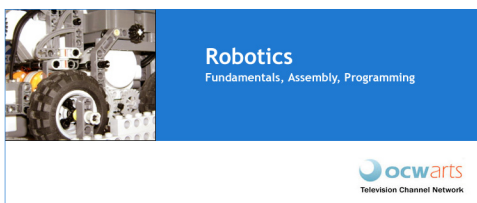
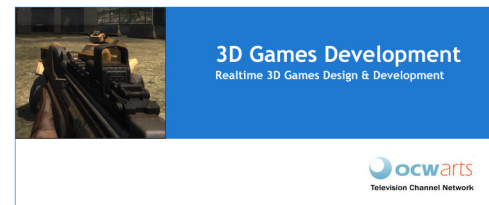
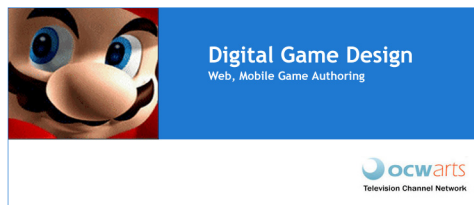
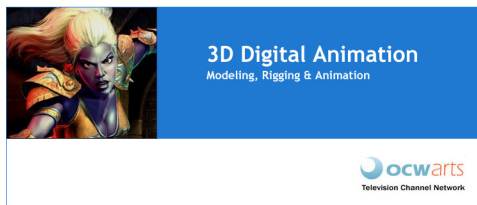
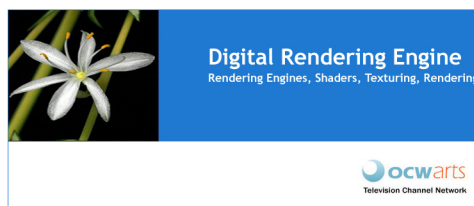
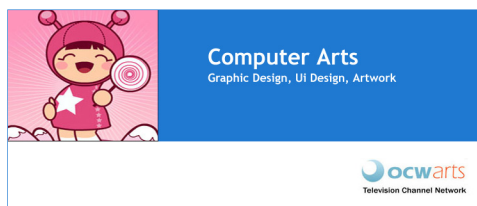


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the

# 3DC challenge

This month we feature the final Making Of articles from the last of the Stylised Challenges held on the [Threedy.com](http://Threedy.com) forums. After a great year and a half of stylised fun, we decided to go out on a high and end with the fantastic entries which flooded in for the final topic: Carnivorous Plant. The 2D challenge is still running over on the [ConceptArt.org](http://ConceptArt.org) forums, but here we bid farewell to 3D Stylised Challenge as we indulge in the final Making Of's from our Carnivorous Winners. Enjoy!

# Carnivorous Plant!

## Stylised Challenge Making Of's

In Association with





# Stylised Challenge

## Carnivorous Plant

### MAKING OF'S

Here we go with the final Making Of articles from last month's top 3 winners of the last of the Stylised Challenges – Carnivorous Plant.

### 3RD – EYESIGHT

#### CONCEPT

My concept was a carnivorous plant disguised as bird in a cage – the bird having been eaten already by the plant! The plant wears a false beak and positions itself so that the leaves simulate a bird's wings. The scene takes place in the room of an apartment, but only the visible parts of the room were modelled.

#### QUICK SCENE SETUP

The target was to set up all of the objects of the scene very quickly, then to create a camera and look for a good angle. I placed all of the elements in the scene and created them by means of lofting and extruding primitive forms (the head of the plant was made from a deformed sphere; the stalk was made using



Fig.01



Fig.02

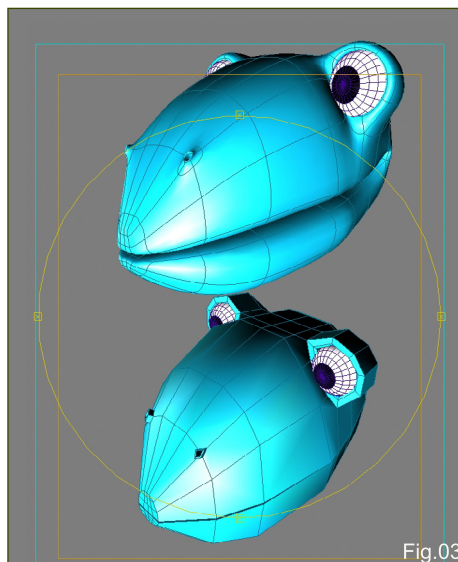


Fig.03

the lofting technique). The furniture was made from some boxes, and I placed two lights in the scene just to see how the objects would appear (Fig.01).

#### MODELLING THE PLANT

I began with the stalk of the plant, creating a loft (from a square extruded along a spline for the main part). I then applied the "Edit Polygon" modifier to create the base of the leaves. It was enough for me to simply extrude certain polygons, and when the stalk was finished I applied a "Meshsmooth" modifier (Fig.02). The leaves were deformed plane primitives, to which



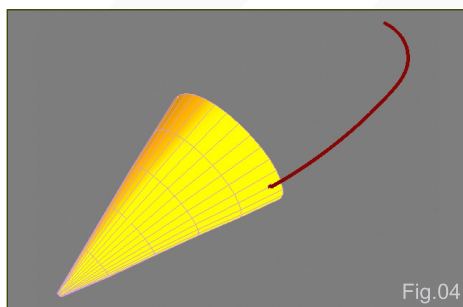


Fig.04

I applied a Meshsmooth modifier again.

To model the head, the starting point was a cylinder which was converted into an Editable Poly and then deformed. I then created the orbit of the eyes and nostrils – the eyes being simple spheres (**Fig.03**). Finally, I added a cylinder to make the false beak (**Fig.04**).

## MODELLING THE PROPS

For the cage, the bars were created through lofts which were duplicated onto a rounded cylinder base. Feathers were primitive planes, to which I applied the "bend" modifier. The

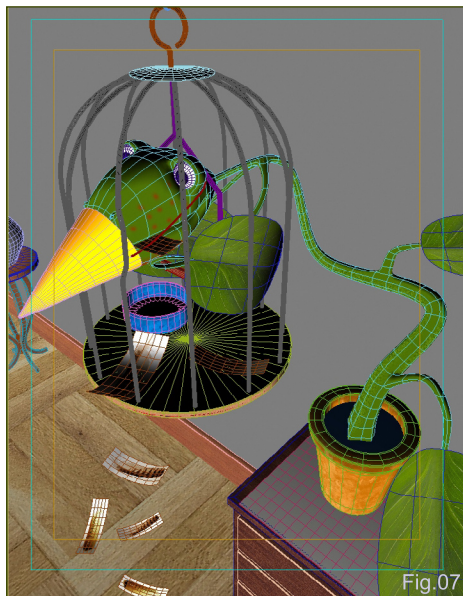


Fig.07

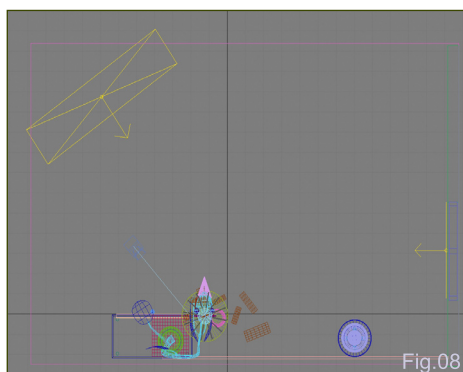


Fig.08

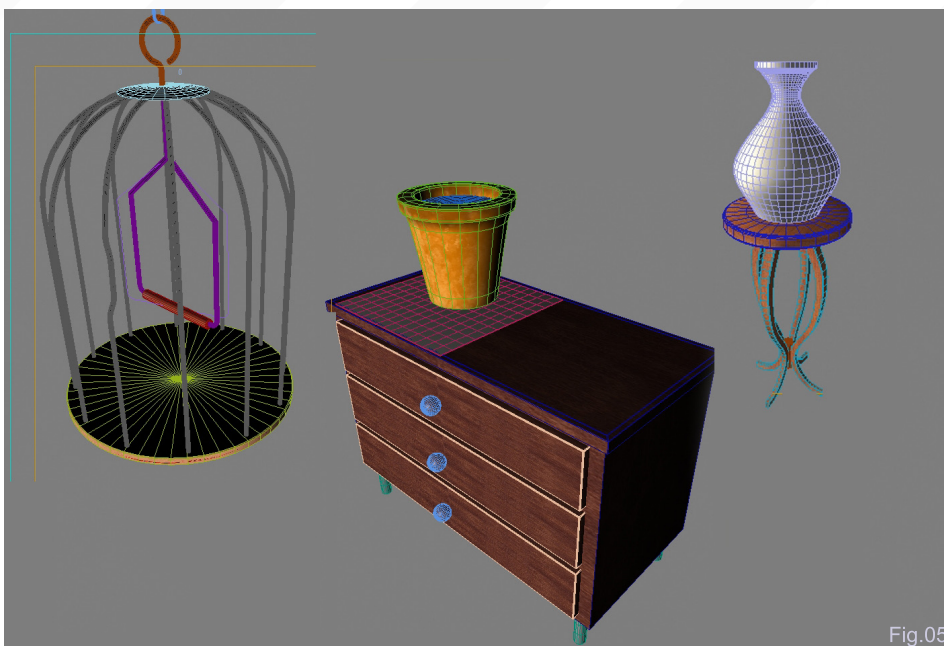


Fig.05

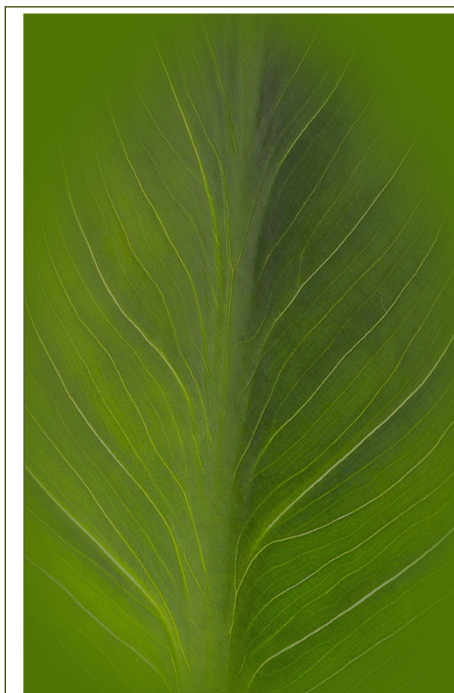


Fig.06

pedestal table was based on extruded forms for the feet, and a lathed surface to represent the tabletop. I then created a simple vase and put it on the pedestal table. The chest of drawers was a box converted into polygons. I extruded to create the drawers and chamfered some of the edges. The plant pot was a cylinder converted into polygons and deformed. Finally, the fabric under the pot was a primitive plane (**Fig.05**).

## MATERIALS

Textures were made in Photoshop; some

were hand-made and the others, such as the leaves, feathers, wallpaper, wooden ground and placemat, resulted from retouched photos. For the feathers and placemat, I used an opaque mask. Blood was then added onto a wooden texture. Here is an outline of some of the textures used (**Fig.06**), and here is the final wireframe scene (**Fig.07**).

## LIGHT AND CAMERA SETUP

I used two V-Ray lights to light up the scene: one to simulate the daylight with a light yellow colour



(placed in the window), and the other one, slightly weaker, to light up the plant (**Fig.08**).

## RENDERING

My chosen rendering engine was V-Ray. I activated "Global Illumination" and chose "Irradiance Map". I then activated the "depth of field" option of the "VRayPhysicalCamera", and the final image was complete!

## EYESIGHT

For more work by this artist please contact them at:

[etienne.fraisse@wanadoo.fr](mailto:etienne.fraisse@wanadoo.fr)



Fig.09



## 2ND – HA-JASSAR

As an illustrator, I use 3D exclusively for illustrations, which means that the rules are more forgiving than those used to make animations (like the cleanliness of the meshes and edge loops and so on), and I rely heavily upon post production.

### CONCEPT

I aimed for a freaky-looking plant which transformed under the moonlight; something close to the werewolf/zombie themes, but in a cartoony style. I did a quick sketch of my concept (**Fig.01**).

### MODELLING

I began with a box and started to extrude and move edges until I had the desired head shape. After finishing the modelling, I UV-unwrapped the model and exported the head to ZBrush so that I could sculpt the details. I also coloured the model in ZBrush using the projection master (**Fig.02**).

Considering the sculpting and painting done, I produced the displacement and colour maps, and then went back to my main 3D application,

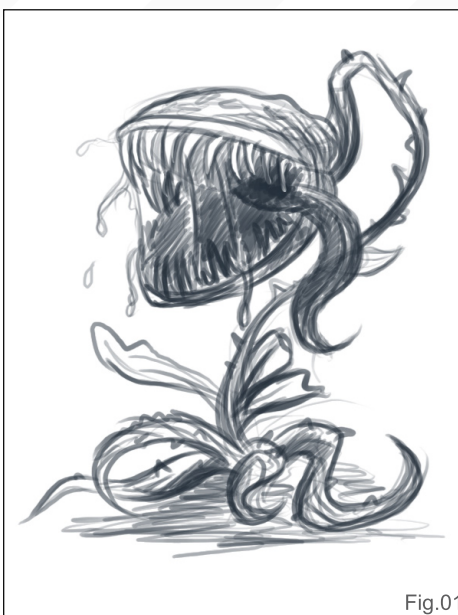


Fig.01

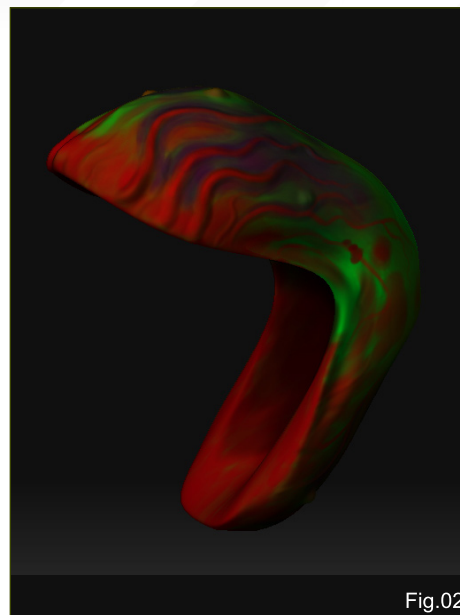


Fig.02

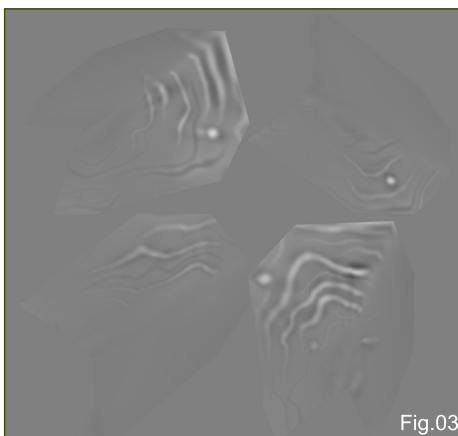


Fig.03

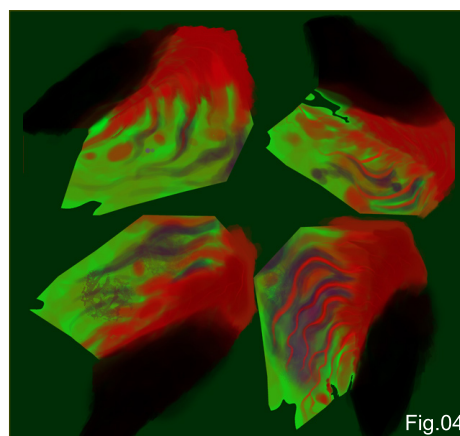


Fig.04

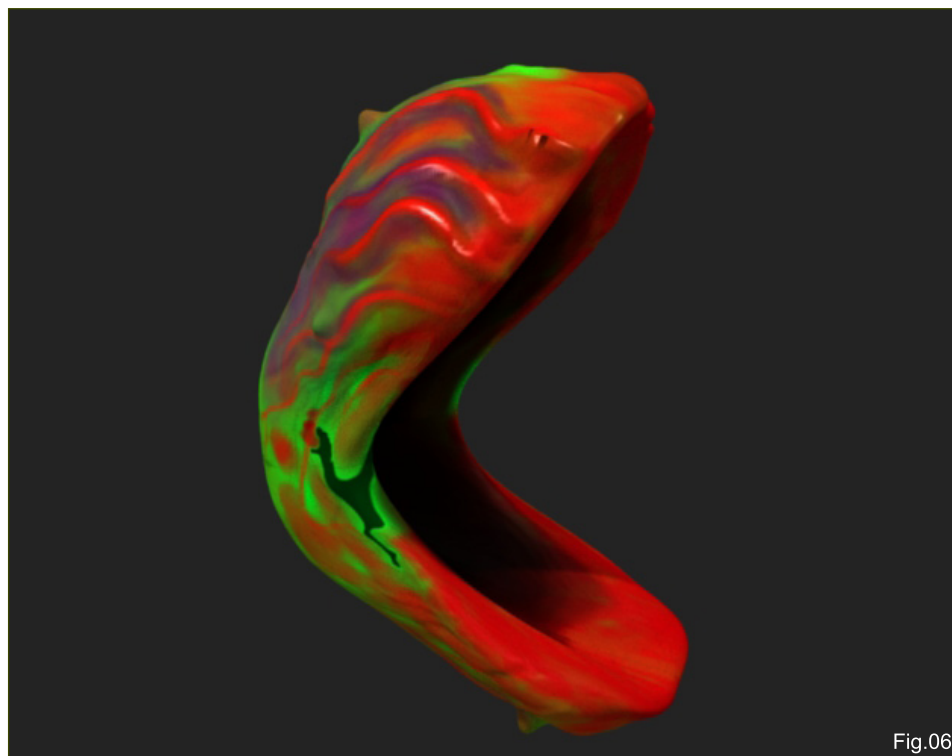


Fig.06



Fig.05

Blender, where I assigned maps to the model (**Fig.03, Fig.04, Fig.05 & Fig.06**).

With the head done, I moved on to making the teeth and tongue. I simply modelled a tooth by creating a cone and then stretching it. I then copied it many times and gave each tooth a unique shape (all by hand) (**Fig.07 & Fig.08**).



**Note:** Don't forget to regularly save your work!

As for the tongue, I wanted it to be blue at first, but most of the feedback that I received on the forums didn't like this choice and so I changed it later on. I also gave it bumps and an SSS material (**Fig.09**).

I then moved on to make the stem. I simply chose to model it using ZBrush's Z-Spheres, because they are fast and easy to use (**Fig.10**)!

So I finished the main stem in ZBrush and then modelled the other parts in Blender (**Fig.11**).

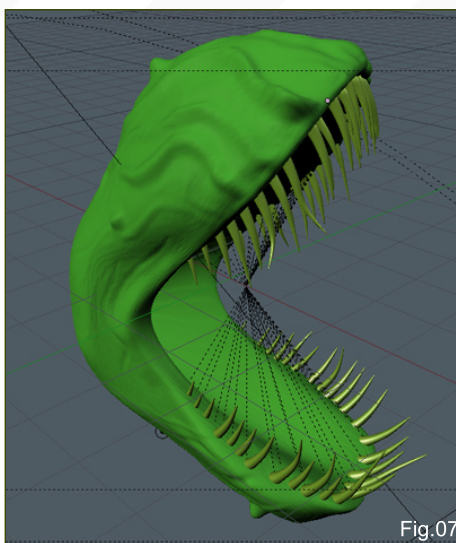


Fig.07

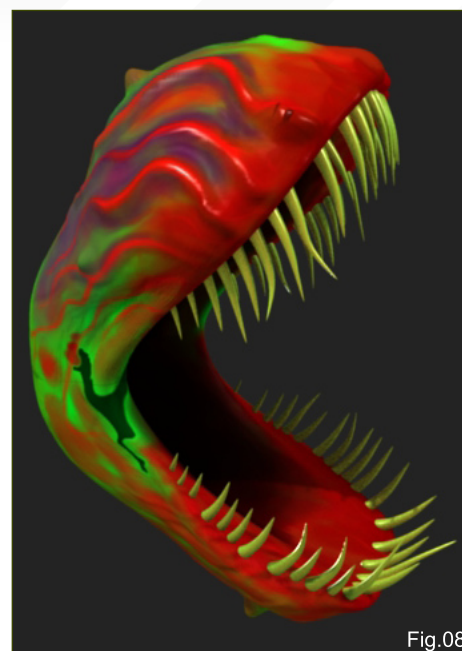


Fig.08



Fig.09

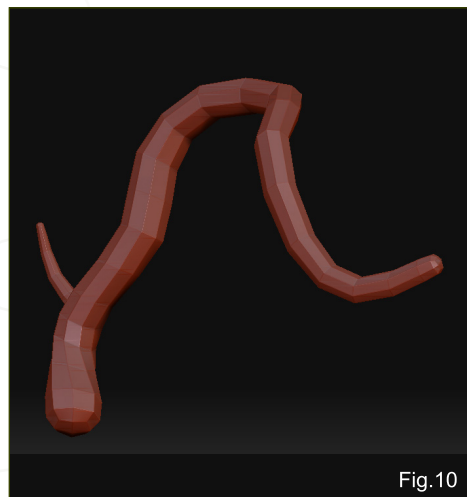


Fig.10



Fig.11

For the ground I just made a simple plane and sculpted the bumps in ZBrush (**Fig.12**).

The grass was also 3D, done by using Blender's particle system, and the moon was sculpted in ZB then rendered in Blender in a separate layer (I gave it a glowing material) (**Fig.13**).

## LIGHTING AND RENDERING

To light the scene I used many spot lights with different strengths, and many "lamps" were used to give light to some of the tricky areas (**Fig.14**). Ambient Occlusion was also turned on.

Rendering the entire scene at once was impossible, so I had to render each part on its own, with a transparent background of course (**Fig.15**).

Nothing too fancy had been done up to this point, but the render did take some time since the resolution was a bit high (2480x3508) and some objects contained SSS materials.

## POST-PRODUCTION

As I mentioned before, I rely heavily on this step and so consider it the stage at which the true "magic" is added to a given piece or illustration. I started off by combining all the rendered



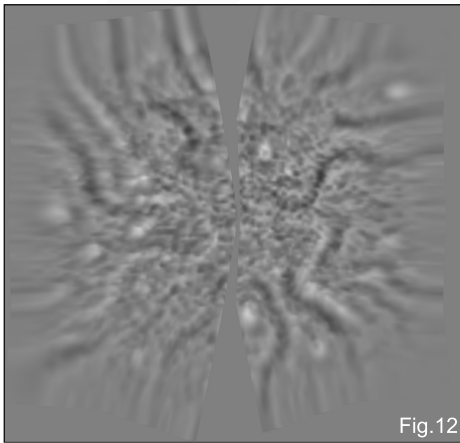


Fig. 12

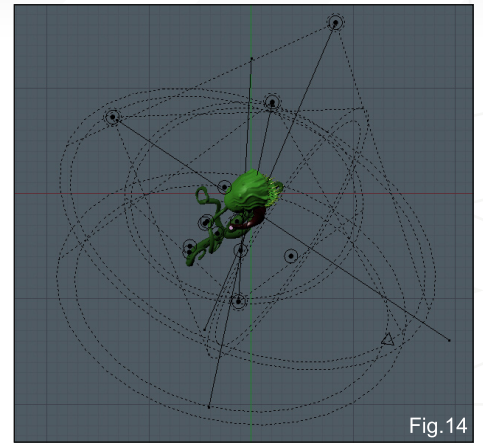
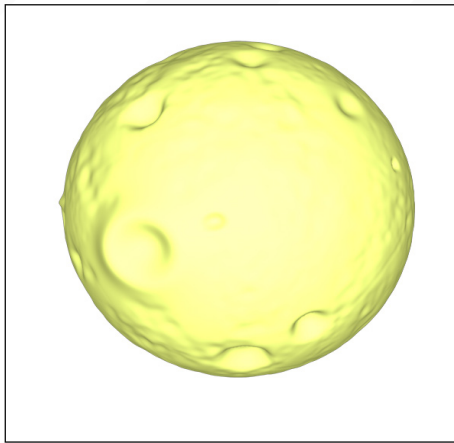


Fig. 14

elements in Photoshop, and then began to paint the background (glows, stars, distant trees, etc.). For this type of work, using a tablet is essential in my opinion. Following the work done on the background, I then started to paint some adjustments, such as drawing small hairs and some details on the plant's stems, and adding some shadows and so on. I mostly used a standard round brush with different opacities, but I also used custom brushes when I wanted to paint a certain texture, or as needed.

The dragonflies were also hand-painted in order to add some extra drama to the scene. Everything was kept on separate layers so that I could go



Fig. 15

back and fix things anytime I wanted. Lastly, I made some final colour corrections – and voila (**Fig. 16**)!

## CONCLUSION

This was a fun piece to make, and I believe that an image should be as moody and appealing to the eye as possible – at least that's my taste! I mean, even a boring looking model can become a pleasure to look at if proper post-production work has been done and some nice artistic touches have been applied to it... After all, that's why I got into illustration in the first place!

## HA-JASSAR

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## 1ST – TONYCLIFTON

### RESEARCH AND CONCEPT

In general, starting with an idea and creating a concept is definitely the most challenging part of the process for me. In this project I wanted to start from an image I already had in my mind, instead of doing research and picking references from the Internet. I knew that I wanted to focus on the head and mouth area of the plant, and it was very important for me to stay open to potential changes, and to keep things flexible. I tried not to be too fixed on one idea only, and I was always prepared to change the whole thing again if something better came up (but of course, this is sometimes easier said than done because of the deadlines for these challenges).

What I initially thought of was a grumpy and speckled plant that had a big, belly-like mouth. I therefore focused on the head of the plant first of all, and then started emphasising it. I drew from there, and the plant turned out to have the look of an elderly person! Well, one thing then led to another and the idea of the false teeth in the glass popped up (Fig.01)!

### MODELLING

I have to admit that this challenge gave me the opportunity to progress greatly, particularly in learning how to become more flexible. I will not cover every detail of the making of this image in this article, but will simply talk about a few of the interesting parts of the creation process for you.



Fig.01

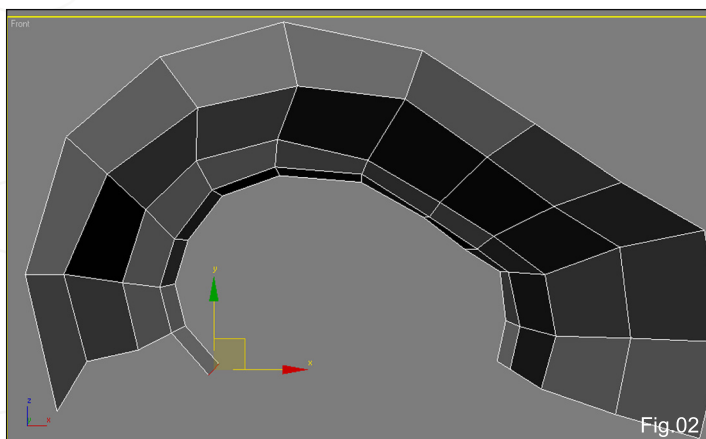


Fig.02

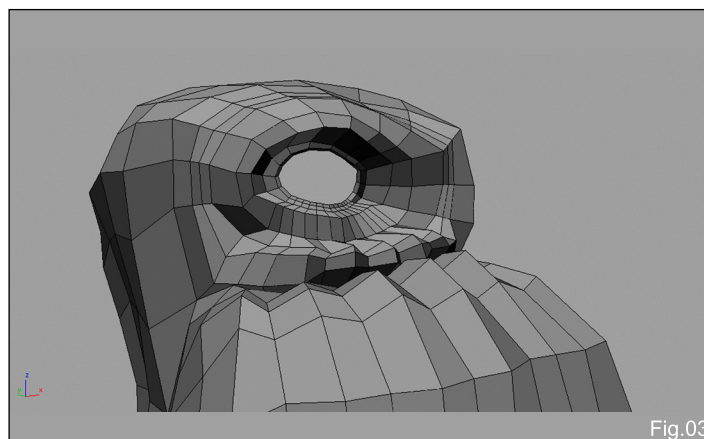
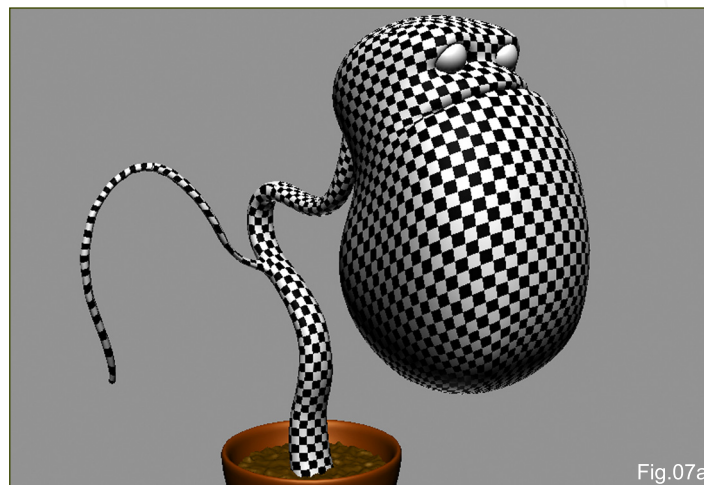
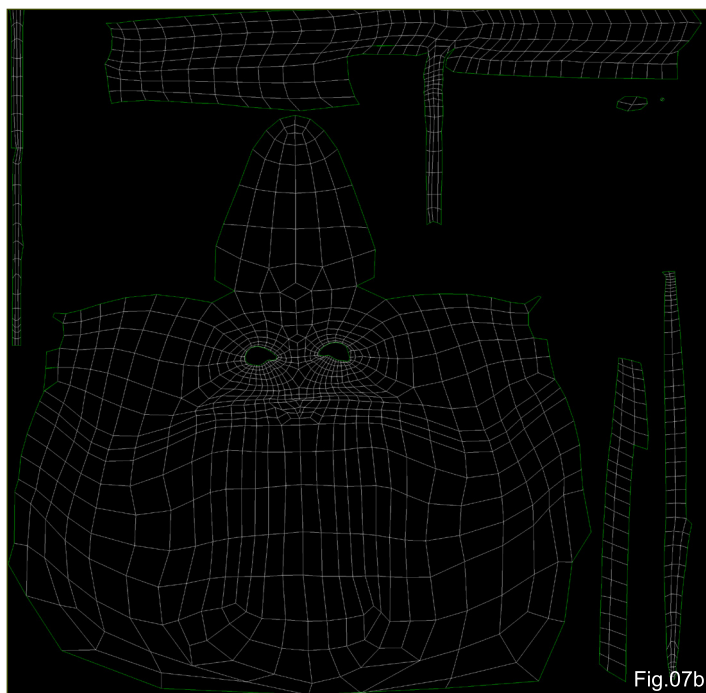
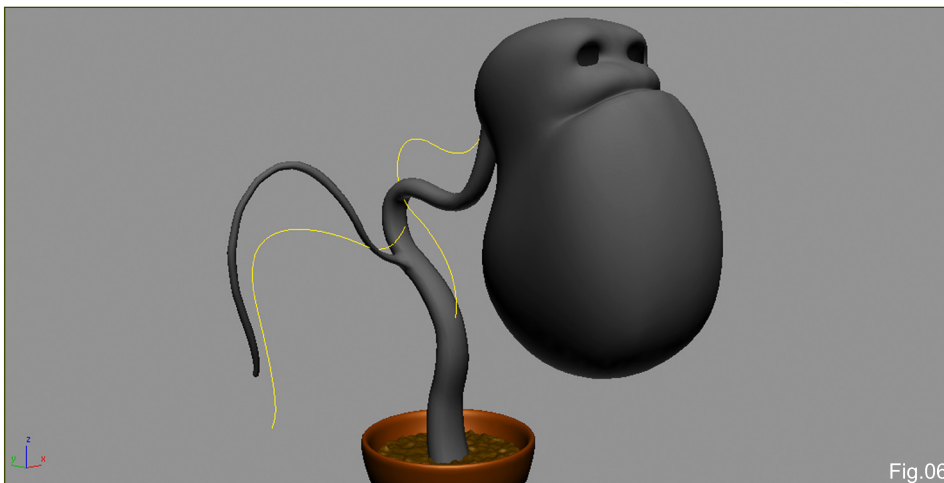
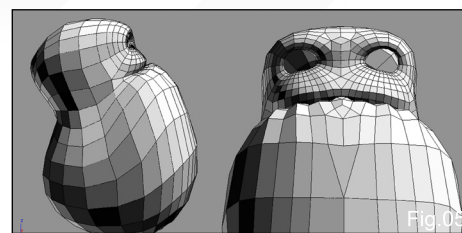
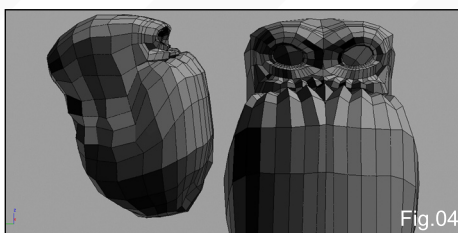


Fig.03

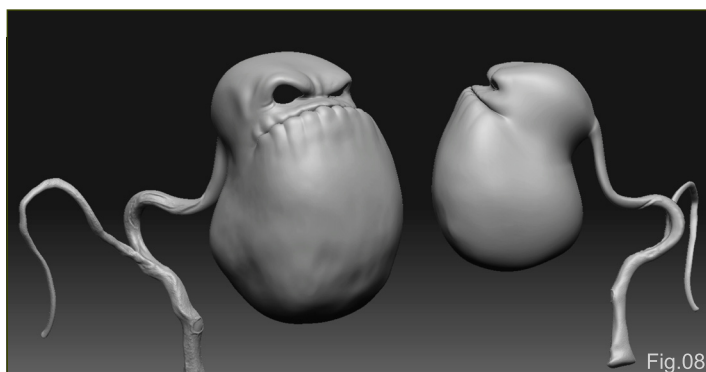


My first approach was to model a nice base mesh and create displacement maps later with a high poly mesh in ZBrush. To create the base mesh I started with a simple plane in 3ds Max and then converted it into Editable Poly; for this I used the edge extruding, poly-by-poly modelling method (**Fig.02**), together with the Symmetry Modifier (**Fig.03 & Fig.04**). After finishing the rough form of the head, I exported it as an OBJ file and imported it into ZBrush. There I moved the vertices into the position I wanted them, in order to get a more refined and smooth result (**Fig.05**). Once I was done with that, I exported the model again and imported it back into 3ds Max.

Here I started the basic body of the plant by extruding a group of polygons in the back of the head, along a spline, to create the trunk,



and then again with a group of polygons along another spline to form the branch. I also applied a Mesh Smooth Modifier at this point (**Fig.06**). This was now the base mesh that I wanted to detail and work on in ZBrush.



After doing the UVW layout (**Fig.07a & Fig.07b**), I started detailing the plant in ZBrush, again with the main focus on the eyes, head and mouth. At this point I must say that I modelled the plant already in position, without using the symmetry option. Furthermore, following the slogan "the final result matters", I simply modelled the parts that were visible to the camera because I was already fine with the view created in the concept drawing, and I did not want to lose more time (**Fig.08**). Actually, this way of working helped me out a lot, because in the end I could not make the displacement map work in 3ds Max as I had planned. So I decided then to change the initial plan and to export a lower subdivision level – just big enough to show the sculpted detail, but not too heavy. I also created a



normal map from this subdivision level, using the ZMapper in ZBrush, to really show all of the details I had sculpted (Fig.09a & Fig.09b).

I started the ladybird in a different way; I created all of the geometry inside ZBrush from ZSpheres (Fig.10) and then exported the final result.

## TEXTURING

Due to a short amount of time (Fig.11a & Fig.11b), I simply painted the parts of the plant that were visible to the camera; painting all textures in ZBrush using the colour spray brush, with different alphas and various colour nuances, in the case of the plant's head. I modified the diffuse map in Photoshop to create a specular map by adjusting the image with a black/white and a Levels layer (Fig.12).

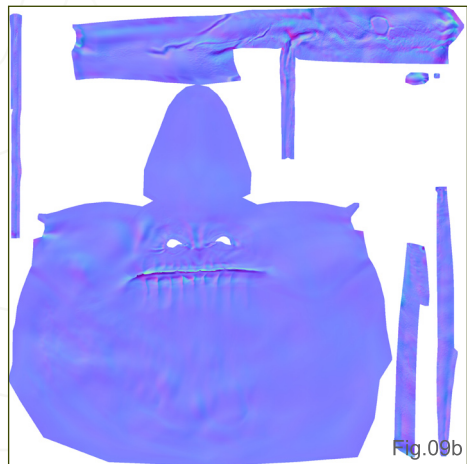


Fig.09b



Fig.09a

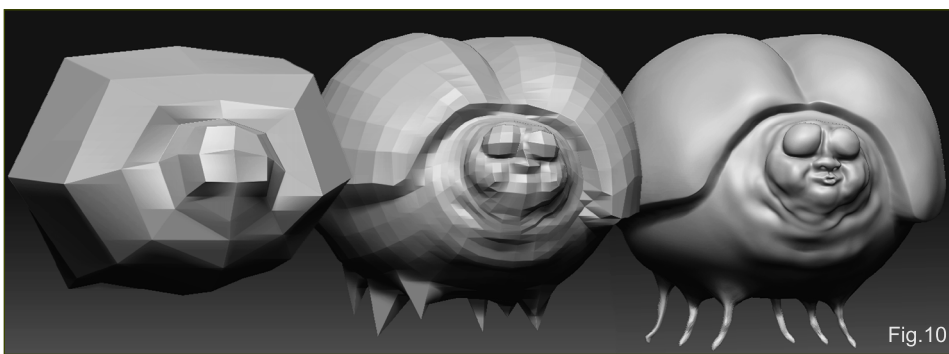


Fig.10

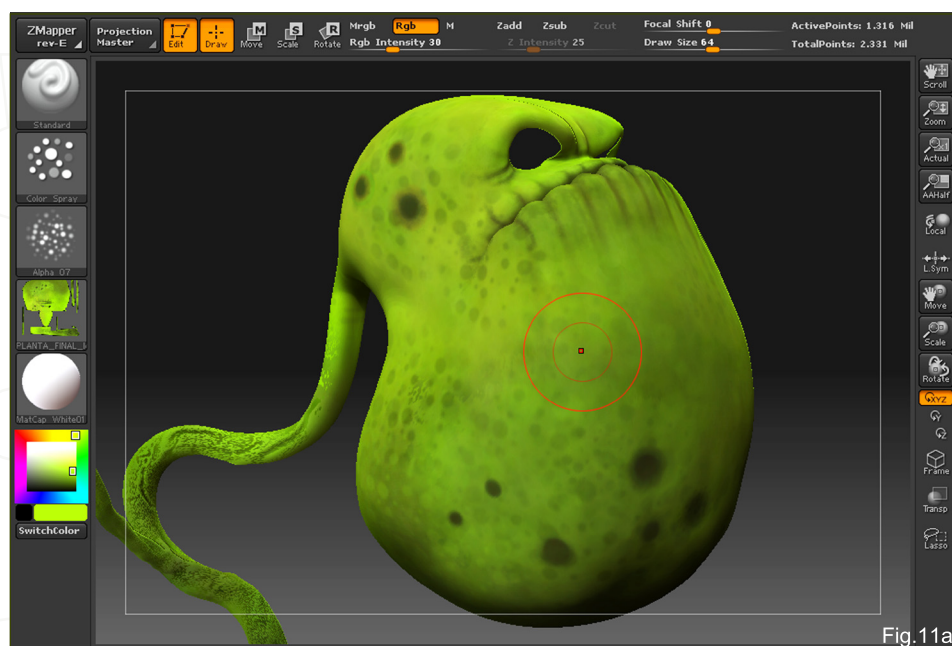


Fig.11a

## LIGHTING AND FINAL RENDER SETUP

To light the scene I used a simple Daylight System in 3ds Max (Fig.13). The setup (Fig.14) was concentrated on giving the plant a saturated yellow-green look. Under Non-Physical Tuning, I increased the value for Red/Blue Tint to 0.2; this tinted the sky colour with a little yellow. I also increased the ISO value to 200, which increased the strength of the daylight. The Vignetting value was also a nice feature for this piece, which darkened the edges of the image. With the remaining values under Image Control, I simply adjusted in direct response to the Render Preview.



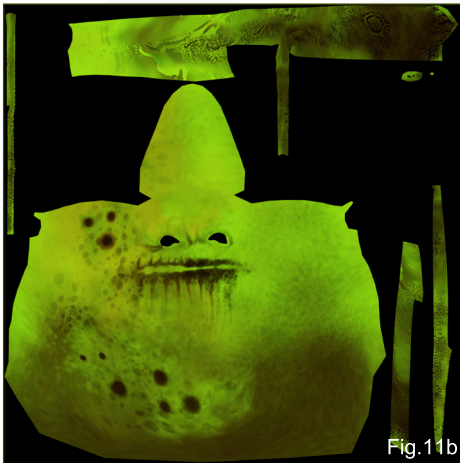


Fig.11b



Fig.12

## COMPOSITION

Because of the satisfying settings in the Exposure Control, I just focused on emphasising the details during the compositing of the final image in Photoshop. I rendered an Ambient Occlusion Pass (Fig.15) and put it on top of the final render in Multiply Layer Mode (Fig.16).

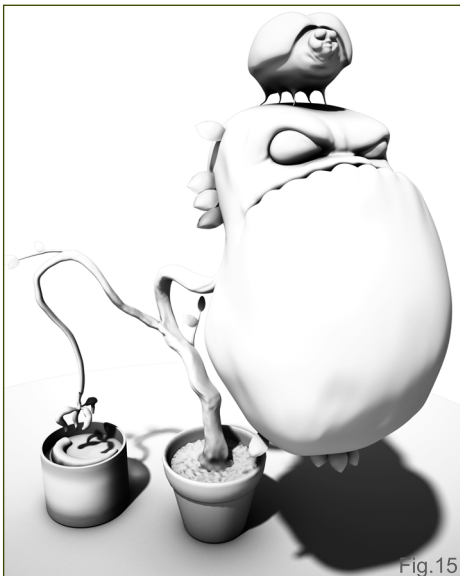


Fig.15



Fig.13

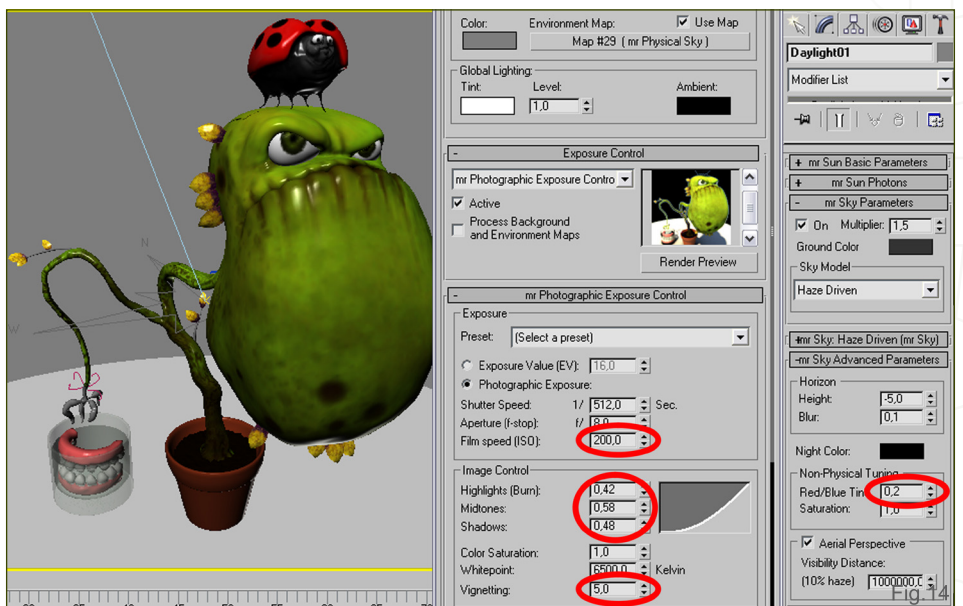


Fig.14

## CONCLUSION

Once again, to sum it up: the final result matters! Thank you very much!

## TONY CLIFTON

For more work by this artist please visit:

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Or contact them at:

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Fig.16



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# the sculpting challenge

Due to popular demand, a Sculpting Challenge has been introduced in the Threedy Forums, over at 3DTotal.com, which has taken us all by storm! These challenges have gathered interest from far and wide and are resulting in some truly awesome final submissions. Due to the speed of these competitions we've got a jam-packed feature this month, with the winners from not one but two of the challenges: The Sculpting Challenge – 004 – “Real-Life Cartoon” and The Sculpting Challenge – 005 – “Cemetery at the Edge of Nightmares”. We've also got a few bonus “Making Of's” from the Manimal (004) and Super Soldier (005) challenges – enjoy!



In Association with





# Sculpting Challenge

Real life Cartoon & Cemetery

## SO, WHAT'S THE SCULPTING CHALLENGE ALL ABOUT?

**The Rules:** Entrants can use any software with sculpting tools, such as ZBrush, Mudbox, Blender, Silo, and so on.

1. Each competition lasts two weeks: one week is allocated to creating and submitting the entries and the second week is allocated to judging and voting for the entries.
2. The moderators supply a base mesh for each competition, from which everyone starts sculpting. This is so everyone gets an equal start and it also helps to keep everyone on topic!
3. There is a time limit for each sculpting challenge: entrants must spend no longer than the allocated time limit, and then post a screen grab of their model. There must be no cheating and the challenge relies on honesty from all!
4. Entrants must not add extra meshes to the base mesh. However, entrants are free to add any accessories or details, as long as they're within the base mesh, to give their characters personality.



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5. There is no rendering, texturing, lighting or rigging – it's all about the high-res sculpt! What we are looking for is the quality of sculpts that can be produced "under pressure". If entries are not complete, they can still be posted as long as they're recognisable as per the brief and on topic!

6. For each final entry, a screen grab from the entrant's software must be posted with their finished work in it. These images must be uploaded to the Threedly servers (using the



"manage attachments" button on the forum reply page). Images should not be linked to external images files. Any images that are larger than the maximum size, or posts containing links to external images (other than for reference materials), will be removed and the poster disqualified.

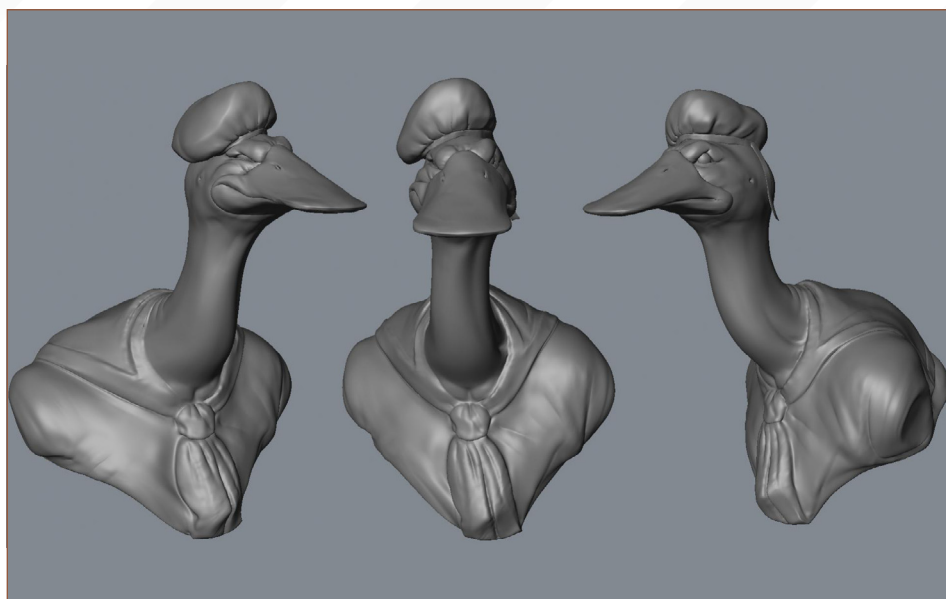
7. Entrants can post multiple entries, but only one final entry for each competition is allowed!

8. Entrants are asked not to create their own WIP threads. Everyone should simply post all WIP screen grabs in the main forum thread, and final entries in the special Submissions thread.

These rules apply to everybody taking part and there are no exceptions!

## WHAT CAN I WIN?

The winner can choose any two 3DTotal products from the 3DTotal webshop. Please



5TH: RWIJAYA

rwijaya@gmail.com  
http://rwijaya.blogspot.com/

note that a few products in the shop are not made by 3DTotal, but 12-month magazine subscriptions are fine! Please see the individual challenge details or contact a forum moderator for further details about prizes.

## SO WHAT WERE THE REQUIREMENTS OF THE 4TH CHALLENGE?

Subject – "Real-Life Cartoon"

Time Limit – 4 hours

The Brief:

This time it's about cartoons, from *The Simpsons*, *Dungeons & Dragons*, *Thundercats*, *Dangermouse*, *Count Duckula*, *M.A.S.K.*, to Disney, and *The Looney Tunes*. There are so many cartoons from our past and present: you could make a real-life Daffy Duck, or a hyper-realistic Fred Flintstone; a bulky-winged Venger from D&D, Akira, or even a bespectacled Penfold! The choice is yours!

As before, we're giving you the option of having eyes, there's a separate .obj file provided or you can add eyes yourself as sub-tools (or software equivalent), but you have to pick one or the other of these options – not both. It needs to be a pre-existing cartoon – no making your own cartoons please, and no Superheroes or Mechas!

Let's see those cartoons come to life...

Here are the winners of the 004 challenge, plus a few of the other submissions that we thought were just ace!



4TH: CRAB PEOPLE

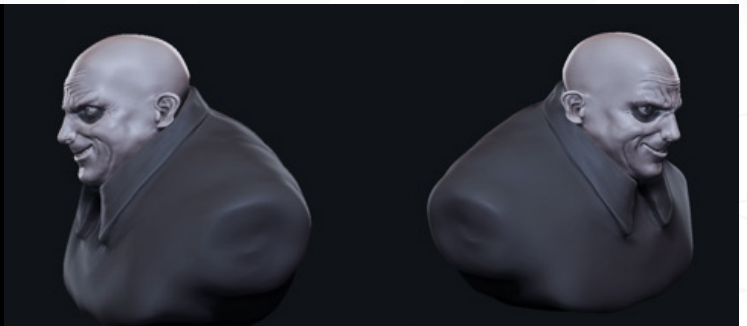
jarrod.hollar@gmail.com





3RD: EMETH003

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2ND: PAP87

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1ST: KAZMAMURAT

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## AND WHAT ABOUT THE 5TH CHALLENGE?

Subject – "Cemetery at the Edge of Nightmares"

Time Limit – None

The Brief:

"As I emerged into a twilight landscape, the night mists were already abroad, rising swiftly from the fringes of the cemetery and slipping across its graves like cobwebs. In the west, a murder of crows made wing towards the failing sun, until, within that wooded horizon their black forms were lost amidst an ancient battalion of pines that stood vast and unmoving, the shadows beneath their boughs ancient and impenetrable. I stepped out of the small archway and onto the cobbles. Ahead of



me, a countless array of statues marked an arrow-straight path to a vast but distant portal, beyond which the flames of a nightmare realm beckoned; my first glimpse of the place I had travelled so far to find.

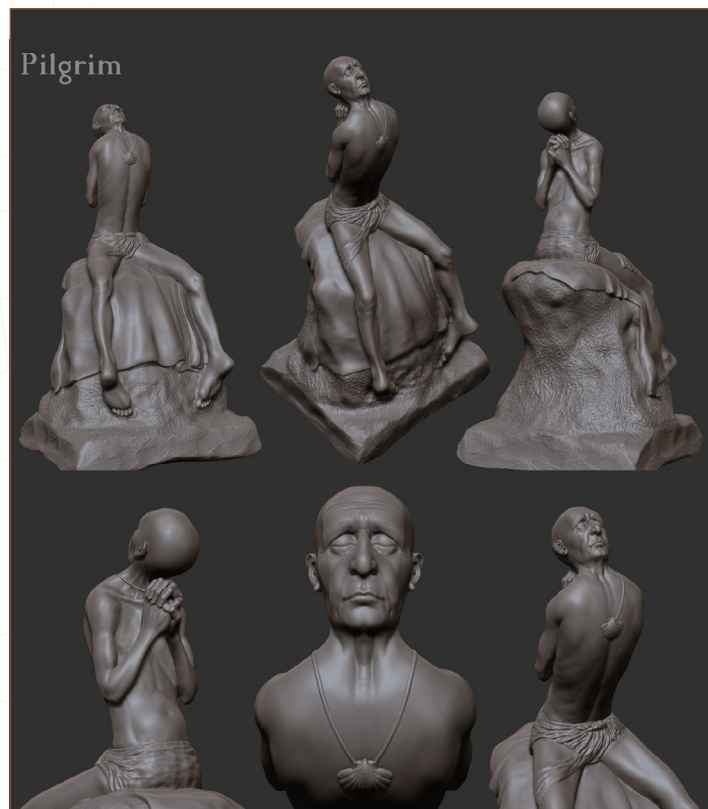
Yet, there was no one to guard it. There were only these statues, a rank of curious visions frozen in stone. What were they, I asked myself, the fallen victims to a quest such as mine? The sleeping guardians of this realm? Or were they merely visions of the nightmares that awaited me: a silent warning that I should turn back now?

"Within five paces I had reached the first. I looked up..."

Right, that should get your imaginations going! Taking inspiration from Alex Oliver's Thread (add hyperlink: <http://forums.3dtotal.com/showthread.php?t=59454>), we are going to work from the same base mesh and create our own dark masterpieces!



HONORABLE MENTION: EMETH003



HONORABLE MENTION: ORDIBBLEPLOP



HONORABLE MENTION: KAZMAMURAT

The idea is simple: create a statue as you might see in the piece written above. It can basically be anything, but it must appear to be a statue. Therefore, it must appear free-standing. Even better, it must appear to have been sculpted. It could be a monster, a beautiful nymph, a demonic apparition, but in some way should be aimed to evoke a sense of great unease. Get your gothic reading-glasses on, go plug in some dark baroque and construct a vision of nightmare. We feel this is a broad

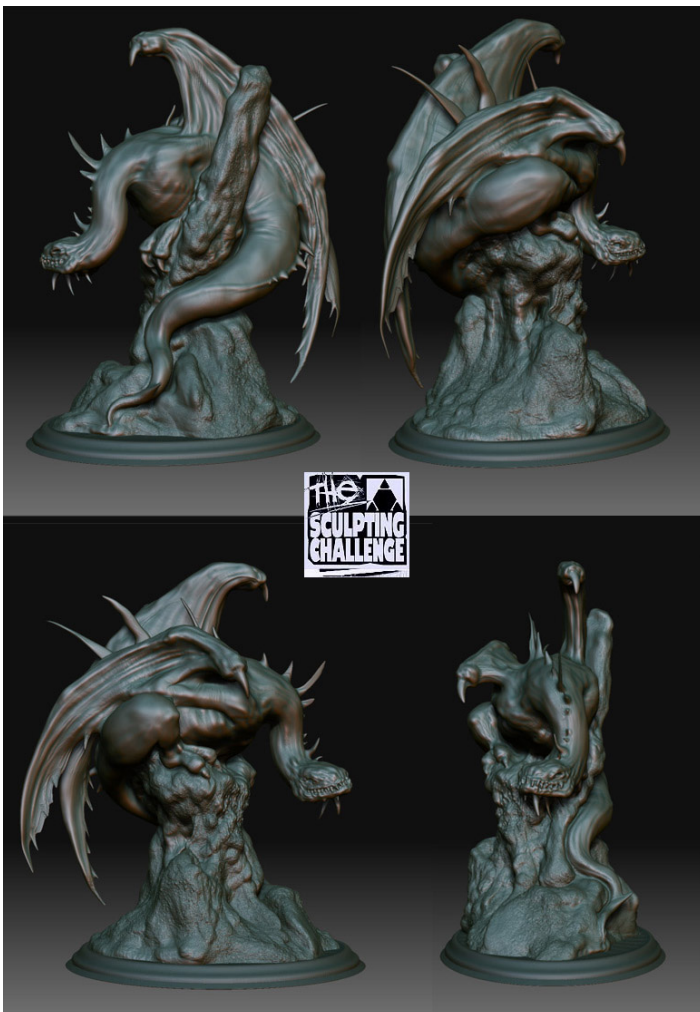


subject that you can really get your teeth into. What statue do you picture in your mind's eye? Is it something from Tolkien? Silent Hill? Harry Potter? Clive Barker? Edgar Allen Poe? Greek Myth? Norse? Hieronymous Bosch? Or the Sistine Chapel Ceiling? It doesn't matter what; just make it weird and wonderful. And please try to stick to the spirit of this competition. If not, expect the other participants to give you a hard time!

So, to mix things up for everyone, we are going to lose the time-constraint just this once! We have two weeks, and anything goes! There's no 3D prize here, so you are free to extract and add bits to this mesh. There is only one restriction: anything you add cannot be as large as the original mesh. They must be enhancements only (eyeballs, earrings, wings, etc.). That said these



4TH: PUCKDUCKER

<http://forums.3dtotal.com/album>


4TH: MR PECULIAR

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3RD: BRYZOL

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sculptures don't have to be human or animal-based; you might sculpt a diorama, a castle under siege, a skeleton hanging from a tree... It could be anything! Let your imagination run riot, and let us sculpt an array of strange and, most importantly, macabre visions to behold!

Here are the winners of the 005 challenge, and again we thought that some of the people who submitted – but didn't quite make the top five – were just too good not to show here, so enjoy our special selection!





2ND: SIAMAKCGM

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## THE QUEEN AND HER LOVER

A twisted vision by MonteCristo-3DT



3DTOTAL - THE Sculpting Challenge 005  
Modelling Time approx. fuctifino

1ST: MONTECRISTO

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## MAKING OF'S

And finally, to finish off this article on the Speed Sculpting Challenges on a high, we have gathered together a selection of some of the top five winners from the 002 and 003 challenges who have kindly put together walkthroughs of the creations of their winning sculpts. Enjoy!

## MAKING OF - "INTERVAIN"

The inspiration behind this speed sculpt came from domestic birds in general, and turkeys in particular!

Before I started work, I prepared a few images of turkey heads and bare chicken wings, as well as older women, as references. Since the base mesh that all participants started from was a bust, I didn't need any full images of the birds.

After importing the base mesh into ZBrush, I separated the teeth from the rest of the mesh and deleted them, since I did not need the teeth in the process of making a bird-man. I subdivided the mesh as much as I could before



Fig.01



Fig.02

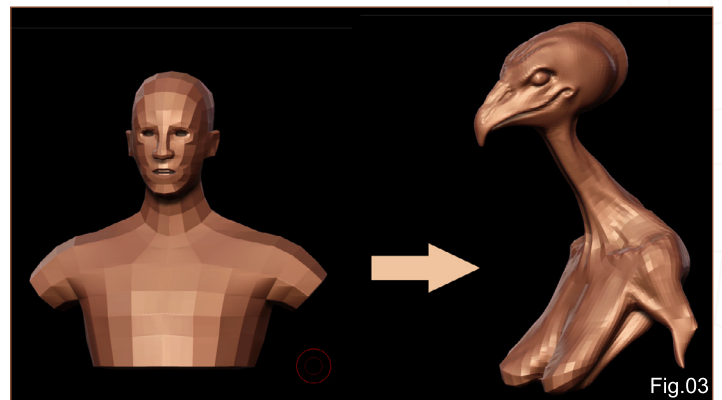


Fig.03

sculpting; 7 levels was the maximum (I always do that before I start sculpting so I can move between the levels with ease – I guess it's a habit!). By using the move tool, I started to shape the base into a bird-like character. My first decision was to stretch the neck and the front of the face to form a beak. I then decided where the eyes would be. This was what the mesh looked like after just 30 minutes of sculpting (Fig.01).

After establishing the proportions and figuring out where the main details of the character would be, I decided to use the eyeballs that came with the base mesh and sculpted in the eyeholes. I also decided to make the head piece into a more bone-like structure (Fig.02).



Up until this point I was working only with the standard and move brushes, but as the model progressed and I started detailing the characters, the pinch and inflate brushes became particularly useful (**Fig.03**). For the crest I used mainly the pinch brush to define the harsh edges.

The detailing around the eyes and on the neck required a different approach. I first used a standard brush with an alpha of 38 to define the strong ridges, and then used the inflate brush to bring out the skin folds around them. This closed the ridges and softened the look. I used the same technique for the skin folds on the elbow, too. I wanted the overall look of the wrinkles to be that of brain tissue, as well as a turkey's neck. I didn't use any custom alphas in this instance, only what ZBrush had to offer by default!



Fig.04a



Fig.04b

Here are the final images of the sculpt, after just four hours of fun. I have added some skeletal details to the back and a more refined shape to the beak (**Fig.04a** and **Fig.04b**). Enjoy!

## MAGDALENA DADELA

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## MAKING OF - "SUPER SOLIDER"

My name is Joseph Harford and I'm a 3D character artist for Ubisoft. I've been creating characters for films and games for the last eight years. When Threedy.com started the Speed Sculpting challenges, I leaped at the opportunity to improve my sculpting, anatomy and concept skills. They are a great opportunity to sculpt with some of the best artists from the community; the number of artists dramatically improving to keep up with the competition is staggering, and such a great source of inspiration for me!

I started the Speed Sculpting "Super Soldier" with the intention of producing a mix of human and mechanical parts, as you can see on the left in **Fig.01**. I shortly after decided against that, and to go with something a little more science-fiction. Inspired by the creative suits of armour worn in *Warhammer*, I went with that idea.

The model on the right of **Fig.01** shows the initial stages for the idea that I decided to run with. I like to block out the anatomy under the armour before sculpting it, so that the suit feels like "it could fit", in real life. With any of my work, it's important to retain some sense of believability and functionality. To get to this stage, I used a combination of the move brush, the clay brush and the standard brush. The clay brush is an incredible addition to ZBrush 3, and lets you sculpt with more of a traditional feeling, layering on geometry as if it were real

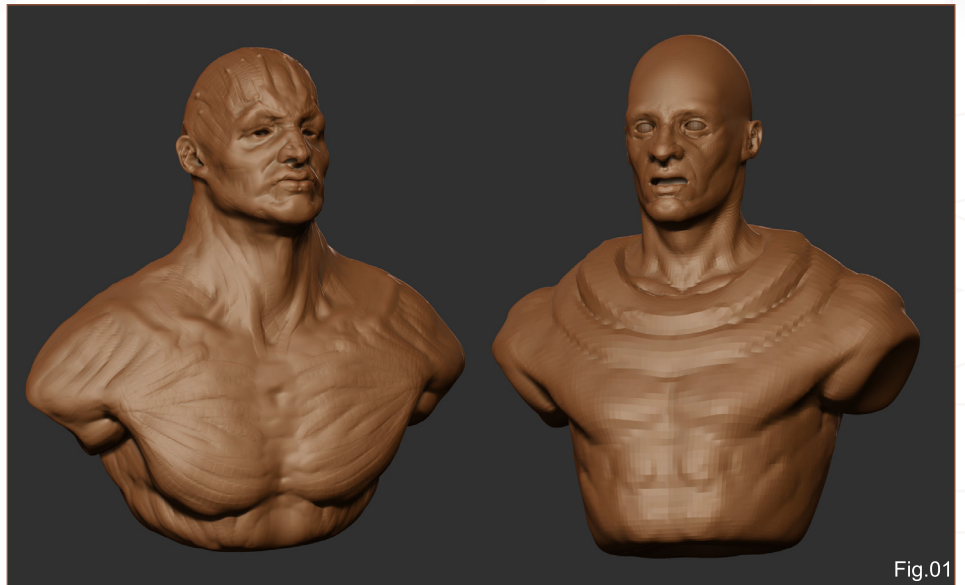


Fig.01

clay. You can quickly build up a good form with this brush. The move brush, when set with a low Z intensity, is invaluable for pulling the forms of your object around. I spent a lot of time in the initial stages pulling my object around into something that resembled the desired state. This saved a lot of time in the long run!

I would always advise to work with your subdivision levels well; once the base is in the right shape, I tend to stay around level 3 or 4 for most of the sculpt. I make sure the anatomy is sound, the shapes are how I intended, and the features are all balanced and work together. It's very easy to go straight to level 7 and start layering on alphas and stencils, but without a solid base and good fundamentals, detail will never save a bad sculpt!

I created some of the headset pieces by painting a mask on the object, inverting it, and using the move tool to pull out the polys in that area. This is a great way to quickly create an accessory, cloth or armour. By taking time to paint a good mask, it can save a lot of time. Masks are not only useful for adding geometry, but I also use them a lot in anatomy. For example, painting a mask where the eye would be and then inverting it and pulling out the geometry around the mask to create very quick eyes. This can be used across the entire model to quickly block-out muscles, bones and even folds.

In **Fig.02a** you can see the levels of subdivision for the final sculpt. Once I had reached level 5 and was happy with the forms, anatomy and concept for the sculpt, I went ahead and added a final pass of detail and sharpened



Fig.02a





Fig.02b

up the hard surface parts. For that I used the "pinch" brush, and painted along the edges of the armour to pull the polygons together, punching the geometry and causing a hard edge. I used the standard brush with a spray setting, and a small circle for alpha to detail the face. For areas near the eyes there are small bumps, so I used this brush setting with ZADD (which pulls the polygons outwards) and painted on those bumps. Then, with ZSUB (which pushes the polys of the mesh inwards) I painted across the chin, cheeks, neck and above the lip areas – which all have negative bumps, where hair grows from. For the neck, a good tip is to use the rake brush with a very low Z intensity. In combination with lazy mouse, a feature of ZBrush that lets you paint a stroke with ZBrush working out the path and correctly altering the mesh without stuttering, I find that I can accurately recreate the small, but many, horizontal wrinkles in the neck.

With just two minutes remaining, only the render was left, but luckily ZBrush 3 is so very powerful as a renderer! Even in preview mode, as in these images, sculpts look superb! The material in the images is one of my own: a matcap simulating brown clay.

## JOSEPH HARFORD

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Fig.03



## MAKING OF - "SUPER SOLIDER"

### STEP 01

I imported the mesh provided by 3DTotal.com into ZBrush, and before I subdivided it, I tweaked the model with the move brush, trying to give it a great shape and some good proportions. I then subdivided it and did the same thing again on the first subdivision level, trying to create a good flow of polygons (**Fig.01**).

### STEP 02

I then started to divide the mesh more, and started giving it shape using the clay brush and lazy mouse, adding more details to his face and some parts of the body. I tend to use lazy mouse a lot when I'm sculpting. Again, at this stage, I was still trying to correct the proportions as I progressed with the sculpt.

### STEP 03

After I'd got good proportions in my sculpt, I started to add more details, such as defining the eyes, lips and nose – again using the clay brush and the standard brush with lazy mouse. Whilst I was working on the head, I also tried to sculpt something on the body and searched for a good design for the model. In every step I was trying to make it better, sometimes even changing it and trying different shapes – always aiming for a better result (**Fig.02** and **Fig.03**).

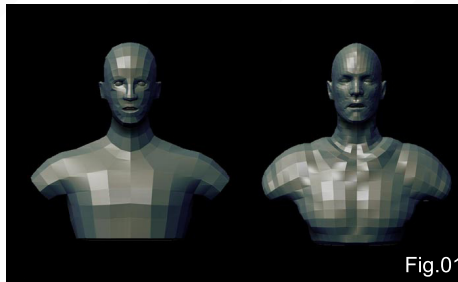


Fig.01

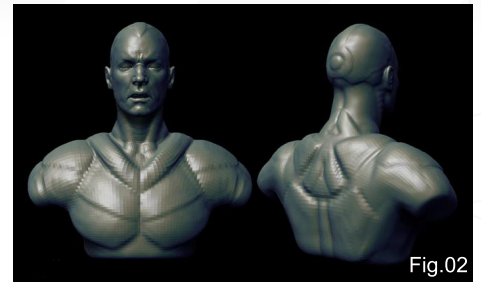


Fig.02



Fig.03

For the body and armour, and other mechanical details, I used the clay brush to sculpt the shapes, the flatten brush to flatten the shapes, and the pinch brush for the edges to make them sharper and better-looking.

### STEP 04

After I got a good shape overall, I divided the model more and started to do more detailing, like adding more details for the different parts

of the head and again trying to improve the proportions. For the wrinkles, I first used the clay brush and then the standard brush with a small radius to refine them better. For small details, like skin pores and other very small details, I used the standard brush with lazy mouse switched on and different, small alpha maps. Also, again, I tried to correct the shape more and more, and here was what I ended up with (**Fig.04**).



Fig.04

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## MAKING OF - "SUPER SOLIDER"

Okay, let's begin!

For the "Super Soldier" speed sculpting challenge, I took inspiration from action games and comics, and made a quick sketch before starting in order to get an idea of the way forward – after all, time was short: just four hours to sculpt the entire concept!

Taking the base mesh provided, I subdivided it a few times. Subdivision level 3 is always a good level to begin to achieve the initial volumes and basic shapes (**Fig.01**). I imagined a very strong super soldier, much more developed than a generic human being (**Fig.02**) and with consistent armour as well. Up to this point I had just been using the Inflate and Magnify brushes, as these are great tools for sculpting at this level of detail. In fact, 90% of the time I use only the inflate brush – it can handle nearly all of the sculpting work alone!

Jumping to a higher subdivision, I began to mark the first fine details (**Fig.03**) and started working on the expression of the soldier. This is the stage that I think is the most crucial, as it's the expression which gives life to a character!

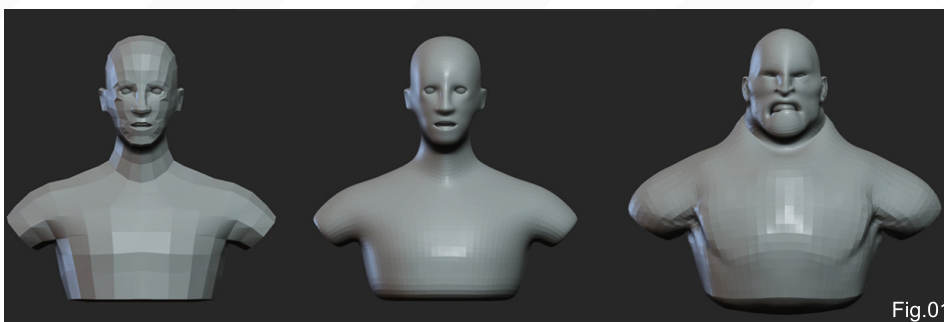


Fig.01



Fig.02



Fig.03

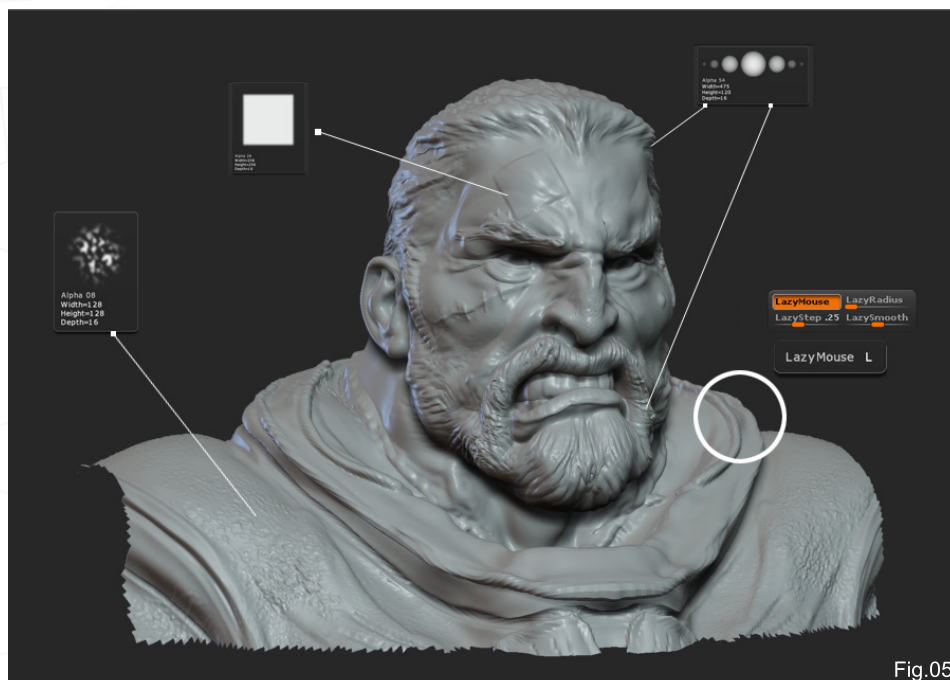


Fig.05

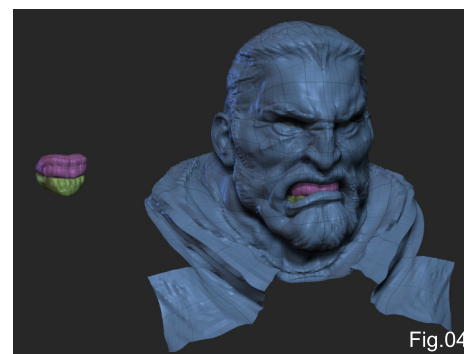


Fig.04

So I focused hard at this point to make sure I got it right.

To work the teeth, I used a feature of ZBrush which is called "Polygroups", with which each object becomes a different group, and each group may be worked on individually (hiding the others) (**Fig.04**).



The clock was ticking and at this point it was time for the final phase of the super soldier (**Fig.05**): applying the finer details and giving texture to the armour; working the expression and wrinkles some more. For fine and continuous lines I use the "lazy mouse" function, with its standard settings. For the hair and beard I added an alpha to the inflate brush, which was used to fuse elements together. And to give a feel of some recent wounds to the soldier, to illustrate that he's a soldier in action, an adhesive bandage detail was very useful (made with an alpha), besides, of course, all the traditional old scars for such a character.



Fig.06



Fig.07

Finally, I added to the armour and gave it the emblem of the eagle and insignias (**Fig.06**), and I detailed it for as long as the time and geometry would allow me. There wasn't any further time for corrections at this stage as I had reached the end of the four hour limit, so after all was said and done, my final super soldier look like this (**Fig.07**). I hope you like it and that this insight into the creation process has been of some use. All the best!

## DALTON ALVES MUNIZ

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## MAKING OF - "SUPER SOLIDER"

### INTRODUCTION

Jarrold Hollar, AKA Crab People, here! In this article I'd like to bring to you the working process of the ZBrush sculpt created for 3DTotal's "Super Soldier" Speed Sculpting Challenge over at Threedy.com.

With these sculpting challenges, you have only a very short amount of time to convey a clear and appealing 3D concept, so I find it very important to sit down with a clear idea of where I want to go with the sculpt before I even open up ZBrush or Mudbox, or whatever the tool of choice may be. It is easy to get lost with such powerful applications and you can quickly lose track of time, so it's always good to have .....



Fig.01



Fig.02

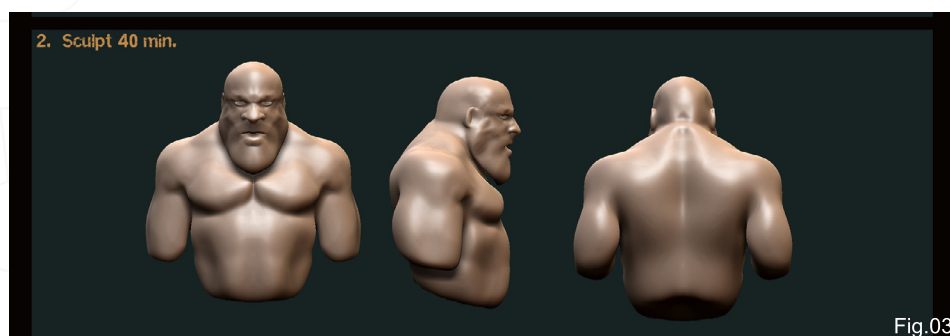


Fig.03

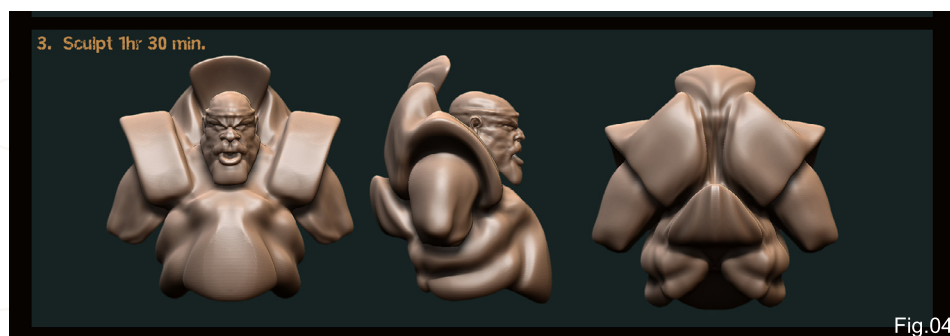


Fig.04

### REFERENCE IMAGES

My first step was to use a drawing from my sketchbook, and I also went to Google Images to search for ideas of what I was looking for (Fig.01). For the Super Soldier challenge, I really wanted a tough- and experienced-looking space marine that could really box your chin in! Immediately I thought of a professional street fighter I had seen a while back – Kimbo is his name. For the sake of time, I just wanted to capture a vague likeness rather than an actual portrait, so I went for just the traits that defined his general character.

### THE SCULPTING BEGINS!

I would usually start a sculpt such as this with the body and then add armour on as a separate mesh. For this sculpture challenge however, we were required to stick to just the one mesh (Fig.02 – the sculpt at 20 minutes). So I started with a generalised sculpt of the body (just a gesture to define his general proportions – no details). I did this as quickly as possible without subdividing the base mesh (provided by 3DTotal).



## SUBDIVIDE!

When I got the rough form finished, I then cranked up the subdivision levels by about six or so, giving me plenty of polys to work with (Fig.03 – the sculpt at 40 minutes).

## ELABORATING

Once I was happy with the general proportions of his body, I started to pull shapes around using the Move brush to get the look of his armour. I always work with large simple shapes first, continuously checking the silhouette (Fig.04 – the sculpt at 1 hour 30 minutes).

## FIX IT!

I then started to refine forms and make some sense out of them. With time running out I was locked into my decisions at this point, so I had to make it work! I also tried to repeat mechanical details for continuity (hoses, rivets, etc.) (Fig.05 – the sculpt at 3 hours).

## DETAILS, DETAILS, DETAILS...

At this point, most of the work of sculpting was finished and the really fun part could begin! I basically detailed the heck out him, until the clock ran out! I found that the standard brush in ZBrush with an alpha of 39 gave me really crisp lines. I also made good use of the “lazy mouse” feature in order to get good straight lines, and I used the flatten brush to quickly get some mechanical details.



Finally I applied the super fine detail, using various alpha brushes, and I used the scatter brush to achieve that worn, “grungy” look (Fig.06 – the final sculpt at 4 hours).

## JARROD HOLLAR

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And that's about it! Hope to see you in the forums soon and happy modelling!!





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# CREATING A COMPLETE SCENE FROM CONCEPT TO RENDER

This series will run over the next six months and will endeavour to give you an insight into how a fully realised 3D scene may be arrived at from beginning to end. The tutorials will attempt to address the key issues and techniques appropriate in achieving this, from concept sketches through to building the 3D scene, mapping and unwrapping, texturing and eventually to lighting and rendering, culminating in a final render. The emphasis over the course of the series will be on the texturing, which will be covered in two of the six installments, and principally the aging and wear of materials.

The schedule is as follows:

**Issue 036 August 2008**

## **PART 1: IMPORTANCE OF REFERENCE**

The series will begin with a look at the gathering and importance of reference material, and then transposing these into some concept sketches and a concept / production painting.

**Issue 037 September 2008**

## **PART 2: MODELLING OVERVIEW**

This chapter will go on to deal with a general modelling overview, which will be non-software specific, and then follow with a look at Photoshop and some general preparation of textures, along with tips on removing seams and tiling problems.

**Issue 038 October 2008**

## **PART 3: PREPARING THE TEXTURES**

This chapter will focus on Photoshop and more specifically, the job of preparing textures, including painting out seams and making images tileable.

**Issue 039 November 2008**

## **PART 4: TEXTURING PRINCIPLES**

This chapter will focus on texturing principles such as mapping and unwrapping, bump specular and normal maps along with combining textures.

**Issue 040 December 2008**

## **PART 5: TEXTURING PRINCIPLES**

This chapter will cover using masks and adding dirt and grime.

**Issue 041 January 2009**

## **PART 6: LIGHTING & RENDERING**

The final chapter will discuss lighting and rendering techniques and show how a simple lighting rig can be set up, along with different render passes ready for a final composite in Photoshop.

# THE COMPLETE TUTORIAL





# AGED & WEATHERED ENVIRONMENT

CREATING A COMPLETE SCENE FROM CONCEPT TO RENDER

## PART 1: IMPORTANCE OF REFERENCE

### INTRODUCTION

As is usual with any new piece, the first step is to try and establish the overall theme and setting for the project. In this case I started thinking about an exterior scene and one with a sense of scale. This was almost all I had in mind initially and so I began doing some research on a number of topics to help form something

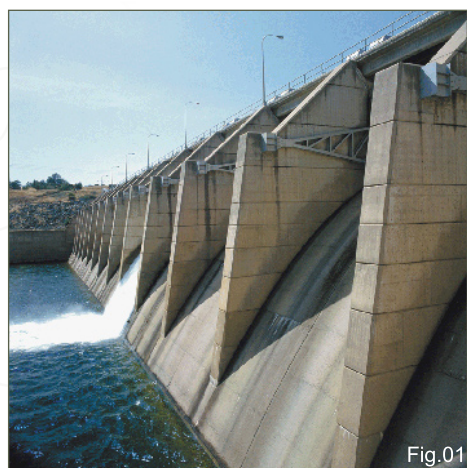


Fig.01



Fig.02



Fig.03

more concrete. At this stage, it is always good practice to look at a variety of different subjects across a broad spectrum. Not only architecture but photos of objects and everyday things – almost anything that can spark an idea. I liked the notion of a dam, which is quite a dramatic structure. I began looking at various images such as **Fig.01** and thought that it would make sense to design an old and abandoned structure as the tutorial would be focusing on weathered textures and worn surfaces such as **Fig.02** and **Fig.03**. These textures form another branch of the research; it's good to look at not just scenes and structures but also surfaces and anything that may help clarify the quality and mood you are after – ideas can literally come from anywhere! In the case of **Fig.02**, the green band along the bottom of the photo implied a structure that is sometimes used to hold water; similar to a dam, but one that had since been drained. This led me onto thinking about harbours and a more aquatic line of research and notions concerning the sea, such as lighthouses (**Fig.04** and **Fig.05**). I really liked these two images and somehow wanted to include them in my theme. I realised that they would not be valid as actual lighthouses, but they are also used as viewing platforms which was something I could exploit. **Fig.04** is a photo of a Victorian lighthouse and



so I began to imagine my scene originating during this period. I started to do a few simple sketches of towers and dam like structures to form the basis of the scene (**Fig.06**). The bottom left image had some shapes in it that I quite liked on both the tower and the large wall, in particular some of the curves on the far right and the two large vent shapes. This sketch led to the idea of an outdoor aquarium that when flooded, would allow fish and sharks etc. to enter the arena through the open mouth of a large stone carving and be viewed from a balcony and viewing tower (**Fig.07**). The theme and setting for the piece was now settled, but the details had to be refined. The fish carving in **Fig.07** looked too literal for my liking, rather similar to a salmon (and the building looked too Oriental), so I looked at some stone carvings and found



Fig.04



Fig.05

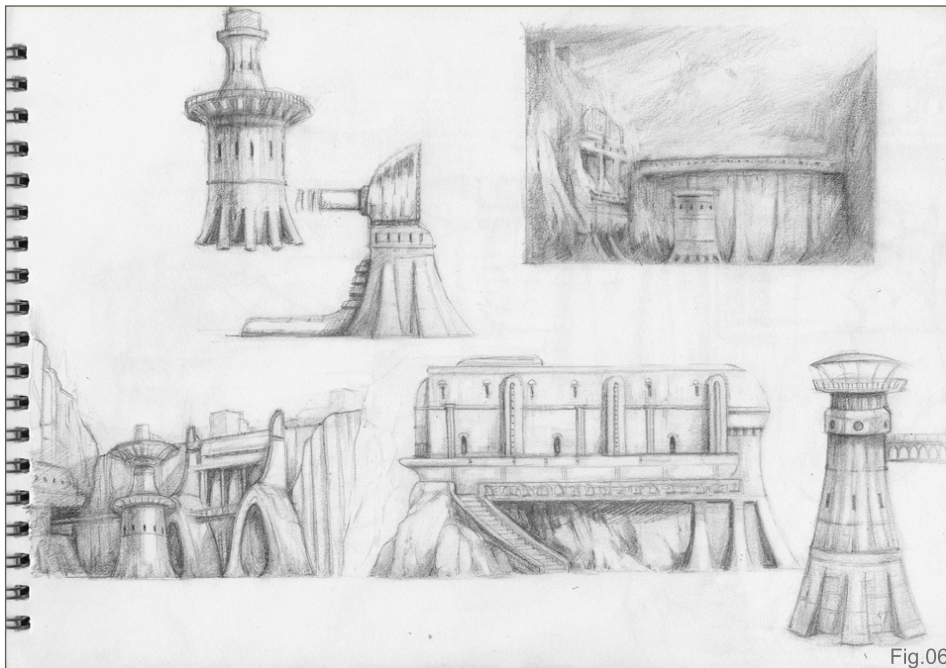


Fig.06

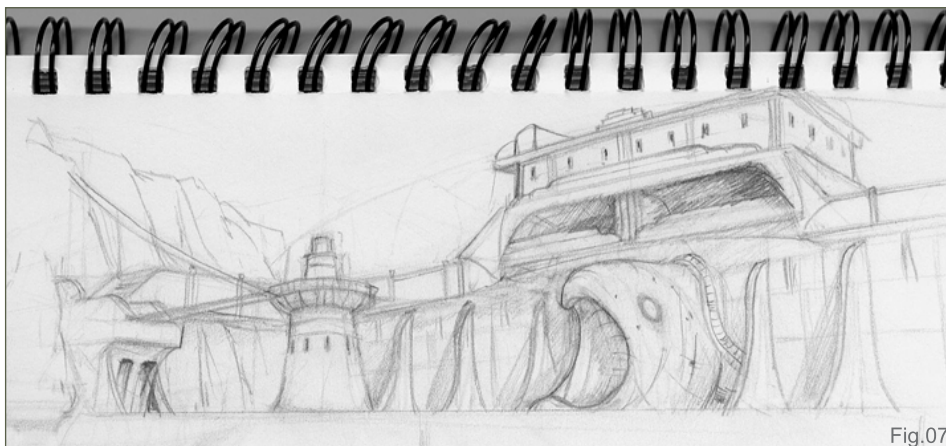


Fig.07

an example carved by Eskimos (**Fig.08**). This gave me an idea about the tail supporting the principal balcony and so I made another sketch to explore this idea (**Fig.09**). Because I liked the curves from the previous drawing, I decided to use some influences from the Art Deco period. I imagined that the aquarium had been built by the Victorians, but was later neglected and then revamped during the late 30's to raise morale caused by the Great Depression, hence the Socrates quote in the bottom right. I also experimented with the notion of a frieze in the form of a character looking skyward to the heavens. With the decision to include some Art Deco influences I found a couple of photos on the Internet which looked to be along the lines of what I was after (**Fig.10** and **Fig.11**).



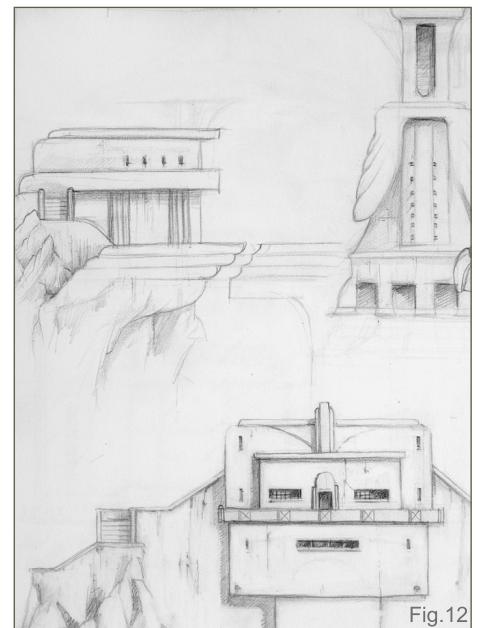
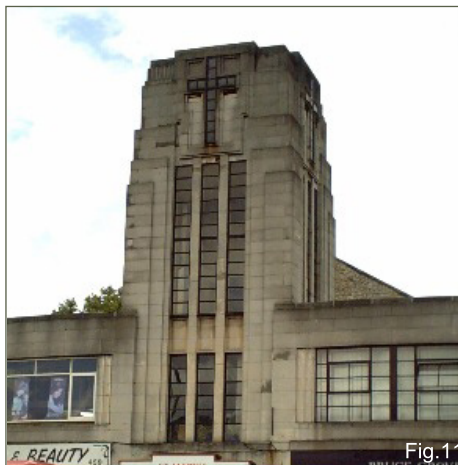
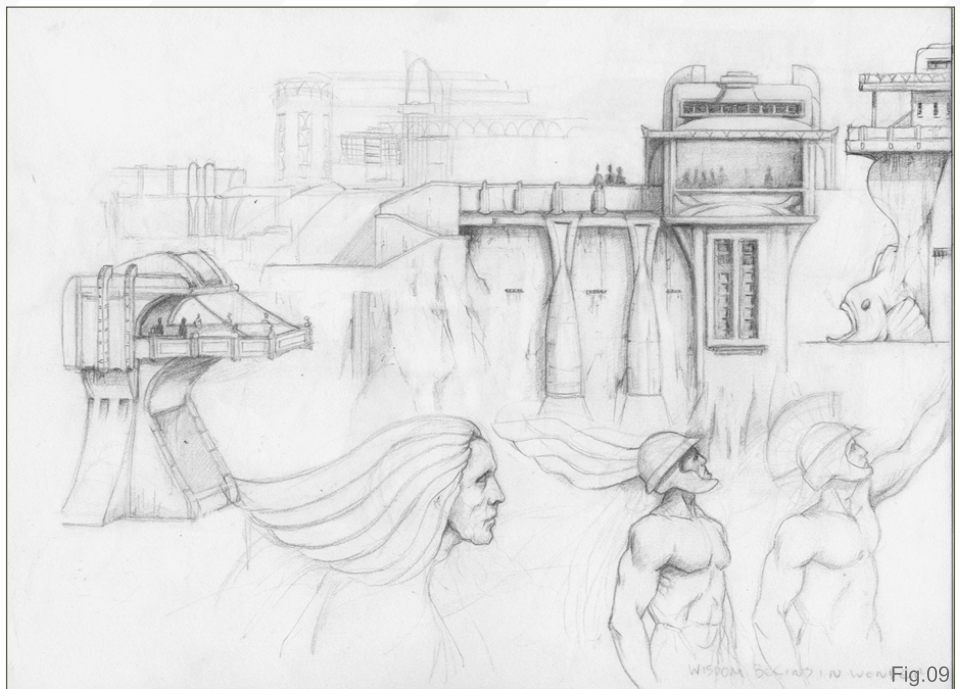
Fig.08



I made a few more sketches to explore some potential designs for the building, based upon the research that I'd done so far (**Fig.12**).

With the research pretty much done, and a vision of the scene in my head, it was time to start on the concept painting which would become the basis for the 3D scene.

I think it is necessary to have a number of issues unresolved in your mind before starting any painting, as the brush marks and unforeseen incidents that begin to appear as the image evolves can suggest things which help to add an energy and vitality. In this way, the image will hopefully produce its own momentum and then suggest ideas in a more intuitive way than if everything is pre-determined.



At this stage I was not sure about the mood of the piece or indeed the final colour scheme and lighting – this is where the concept would fill in the gaps. I knew I wanted a high wall supporting a building with a fish head and a tower, roughly in an Art Deco style with some Victorian remnants. This was enough to get on with without having all the details worked out.

The concept painting that emerged can be seen in **Fig.13**. You can see that the tower has incorporated elements from **Fig.04** in the form of the metal panels and I have also included the



supporting struts under the balcony from **Fig.05**.

I have modified the tower canopy from **Fig.06** and added the Art Deco detailing on the building façade which can be traced to the two example photos. The wing on the character's helmet is reminiscent of a pelvic or dorsal fin and is echoed in the pectoral fin on the fish below. I also carried this design through the detailing on the building to maintain a consistency and sense of design. The railings that surround the tower platform have been influenced by a design I found in a photo (**Fig.14**). You may also notice that the main wall supports a balcony / walkway which was apparent in all three sketches to



Fig.14

some extent. Something that is not included in the painting, but I knew would feature in the final 3D render, is a covered walkway which will connect the tower to the wall balcony (see **Fig.06**). I wanted this to look very Victorian and so looked at some wrought ironwork, as well the



Fig.15



Fig.16

classic palm houses typical of the period (**Fig.15** and **Fig.16**). These two influences can be seen in the final render.

This concludes the key research and reference points for the concept piece that I decided to entitle "Aquarium".

I hope in this tutorial I have provided a brief glimpse into some of the processes involved with developing a concept. You can see that the image has been inspired by a number of references that vary in their formats, but ultimately combine to create something new. Next month we will continue with a look at a general modelling overview, which will not focus on any package in particular, but will offer some general principles instead.

## AGED & WEATHERED ENVIRONMENT

CREATING A COMPLETE SCENE FROM CONCEPT TO RENDER  
PART 1: IMPORTANCE OF REFERENCE

RICHARD TILBURY

For more from this artist visit:

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# BEGINNER'S GUIDE

## TO ZBRUSH PART 7 BY WAYNE ROBSON



# BEGINNER'S GUIDE TO ZBRUSH PART 7

## CREATED IN:

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## INTRODUCTION

Well here it is: the final part in the ZBrush series for beginners. It doesn't seem too long ago that we had part one, does it? In this series so far, we've taken a very low polygon base mesh, made with ZSpheres, and turned it into a digital sculpt that is within the reach of most people starting out (although I have made the model a little bit of a challenge, too, so that it helps push you to your limits as a new ZBrush user!).

In this last article we will be taking the sculpt that we completed in the last article (**Fig.01**) and posing it. After we've done that, we will need to fix the anatomy a little to help it flow with the pose. Once that's done I'll then give you a quick outline on the theory behind the preview panel, so that you can export out some nice renders

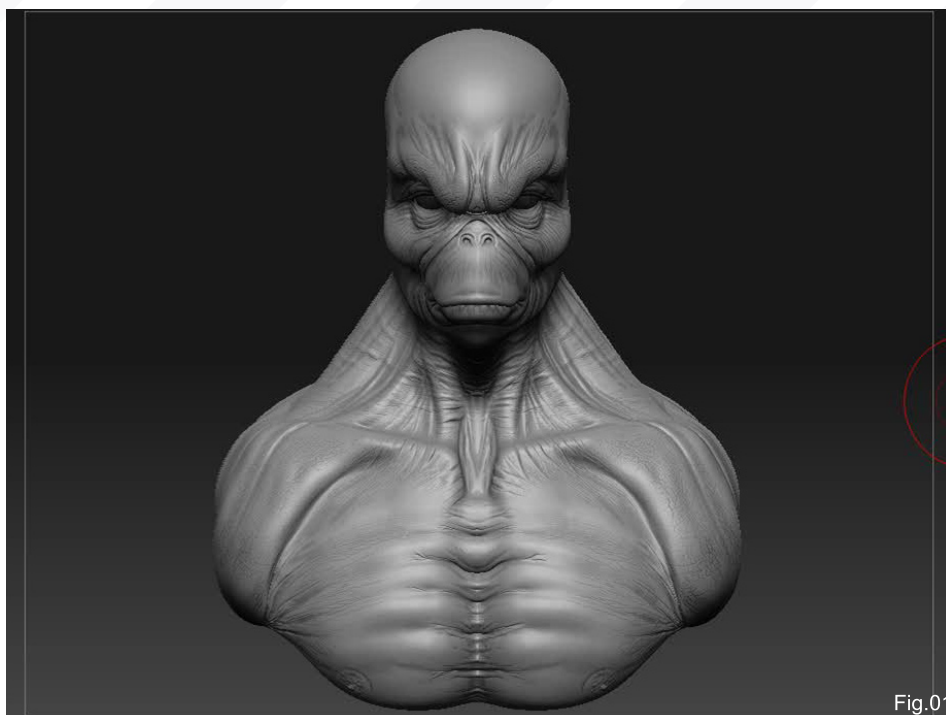


Fig.01

of it. The knowledge within the seven articles in this series contains everything that you need to know in order to create your first completed digital sculpture. I hope that you've enjoyed following this tutorial series as much as I have writing them for you.

## POSING THE MODEL

We are going to pose the model using the "Transpose Master" plug-in, made available for free by Pixologic. If you haven't got it already, just head over to Pixologic's website and download it (it comes with full installation instructions). Transpose Master, by default, steps each subtool in your model down to its lowest subdivision level to enable you to pose the entire model, including its subtools at the same time (**Fig.02**).

With our model this would give us a problem; as it stands at the moment, the lowest subdivision level of the bust itself is too low to pose. If you take a look at the image provided, you can see that, although subdivision level two is better, it still lacks some geometry around the neck areas to enable it to deform correctly. So step up to subdivision level three and then delete the lower subdivision levels. We do this so that we aren't going to have any issues when Transpose Master steps each subtool in our model to its lowest level (we can always get these subdivision levels back again by hitting the Reconstruct Subdiv. button in the geometry section of the Tool palette) (**Fig.03** and **Fig.04**). As a habit, I always step each subtool down to

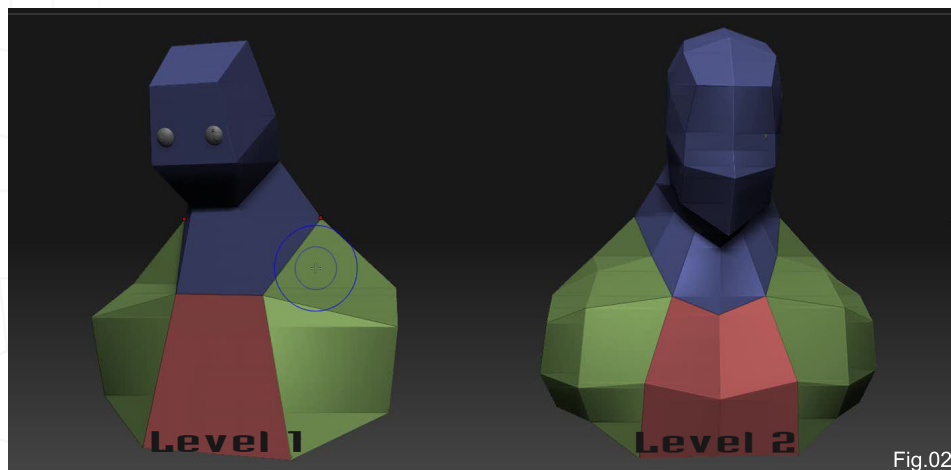


Fig.02

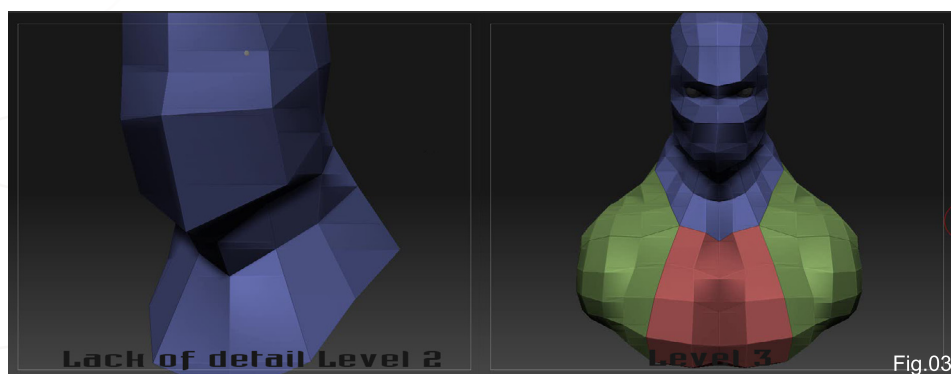


Fig.03



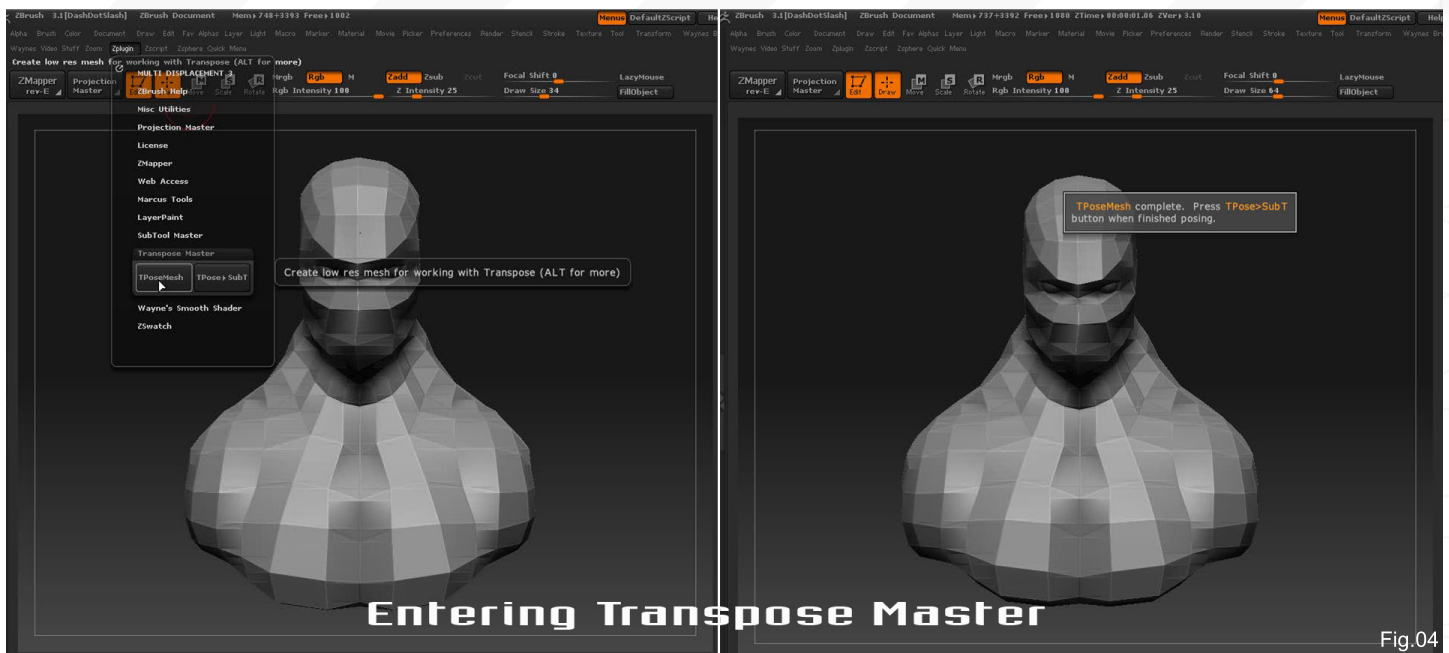


Fig.04

its lowest subdivision level by hand anyway, mainly because I'm a big believer in "helping" a computer out by not making it work too hard. Go to the ZPlugin palette and open up the Transpose Master section, and then hit the "TPoseMesh" button.

All of the subtools have now been temporarily grouped together in one mesh for us to pose, and this does have a particular quirk that I'll outline in a moment. Transpose Master makes use of the transform functions (move, scale and rotate); by using topological masking we can mask off, along the polygon flow of the model, different sections and then pose them. You will notice that Transpose Master also puts your model in orthographic mode, instead of perspective. For some models this can be a good thing (for example, when you need to line up a full body pose), but for our model it's no big deal, so we can turn perspective back on again by hitting the "P" key.

## ACTION LINES

As actions lines are the one thing we must know how to use in order to pose our model, it is worth covering them briefly in this tutorial. An action line is a line with three circles on it and two of these circles act as a sort of pivot point. To move an action line itself (as opposed to the

geometry), left-click and drag it by the edge of one of the circles. If you do this with either of the end circles, then that end will be moved as you drag; however, if you left-click and drag the outside of the centre circle then the entire action line can be moved (Fig.05).

Action lines are used with masks that mask off areas we don't want to be affected by whatever transform we do on our mesh. These can either be masks painted by hand (or from a texture

intensity either for that matter), or we can use topological masking to help us move faster.

## TOPOLOGICAL MASKING

Simply put, a topological mask is a type of mask that we can create in ZBrush that will follow the topology and edge flow of our model as we create it. To create a topological mask, simply hold down the Ctrl key while in one of the transform modes (move, scale or rotate), and drag along the geometry (Fig.06). You will

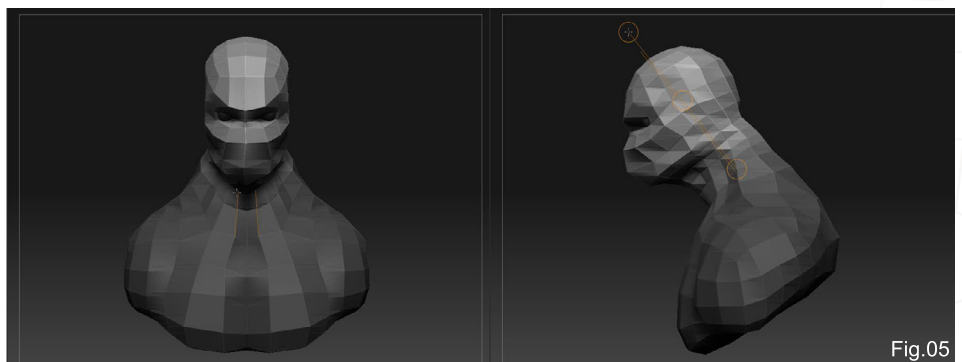


Fig.05

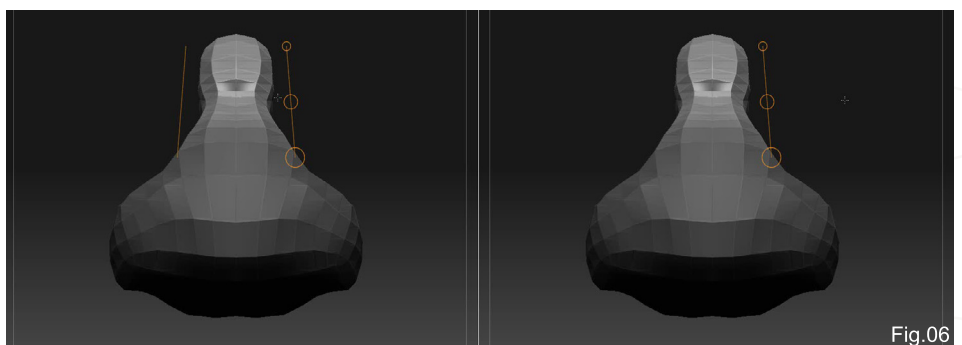


Fig.06



see (and this is especially obvious if you turn your PolyFrame on by pressing Shift + F) that it follows along the topology of your model (hence its name "topological masking").

## POSING THE MODEL

With all that theory out of the way, we can finally start to pose the model. We will start off by posing the head in a two-stage process. In my experience, rather than simply "going for it" all at once, breaking down a pose into two or more parts makes it much easier to get something dynamic. Drag your action line from the base of the neck to up above the head, as shown. Now drag a topological mask by holding down the Ctrl key and dragging it until it's at the base of the neck (**Fig.07**).

We aren't ready to roll just yet, as right now we have two action lines and we're only going to need one of them. So go to your Transform palette and turn off the X symmetry (or hit the X key to toggle it off). The rest of our work will all be asymmetrical, so we won't need it again. Now that we've got only one action line, we need to line it up with where the vertebrae would be in our model; this will create a realistic pivot point. Hold down Shift and snap your model to a back view. Press Shift + F to turn on the PolyFrame and drag the centre circle by its edge, moving it into the centre line of the model (if you have trouble, the PolyFrame helps a lot with lining this up) (**Fig.08**).

If we were to rotate our head right now, we'd hit that "quirk" that I mentioned earlier. The

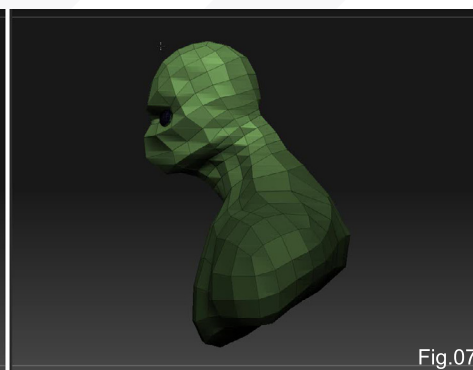


Fig.07

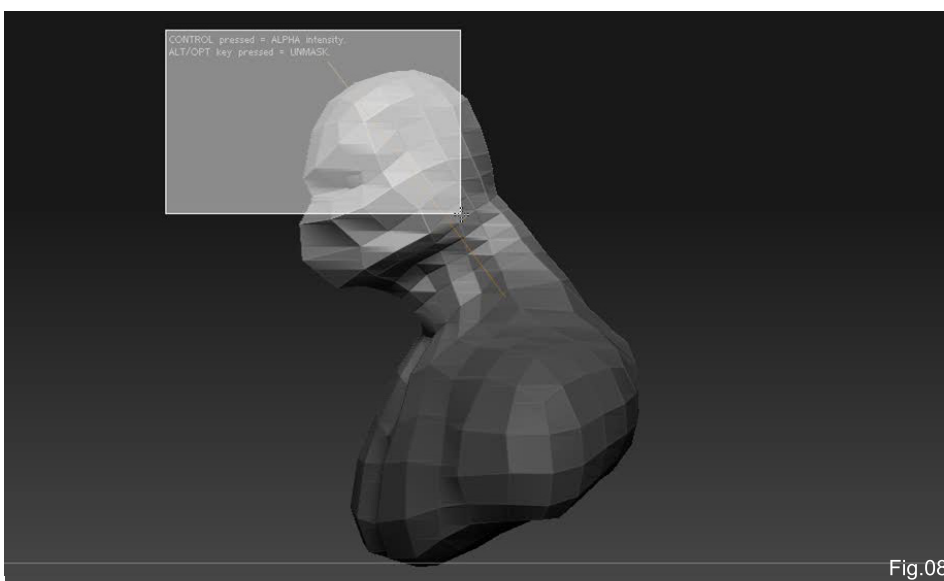


Fig.08

eyeballs are still masked and so are not affected by the action lines. Why is this? Well, as they are separate geometry (and by this I mean no vertexes from them are attached to the other subtools), the topological mask has masked them off. To unmask them, simply hold down Ctrl + Alt and drag over where the eyes are, as shown.

We are now finally ready to pose the model. Making sure that you are in rotate, left-click and

drag in the centre circle (not the edge, but inside the circle this time). This will allow us to make the head look to one side. This will also throw the alignment of the action line out, so drag each end into place again, ready for the next part (**Fig.09**).

While the head looks OK in its current pose, to my eye it doesn't really say anything or convey any emotion or feeling from within our model.

So hold down the shift key and drag your model

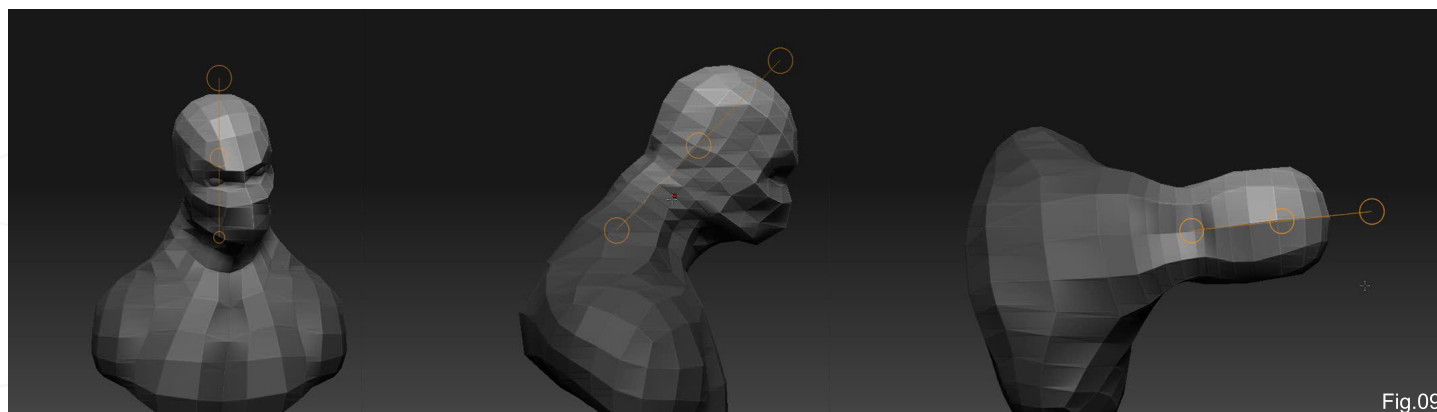


Fig.09



to get it into a front view, and then just rotate the head to one side a little, as shown. This gives a feeling of puzzlement/thought to the pose, as anyone who has ever owned a dog can probably confirm (**Fig.10**).

Press Ctrl and left-click outside the model in order to invert the mask so that we can start to

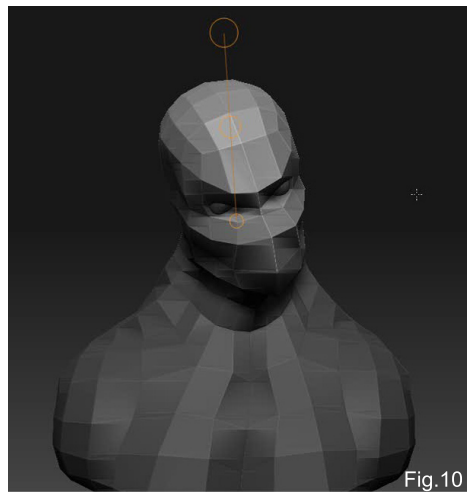


Fig.10

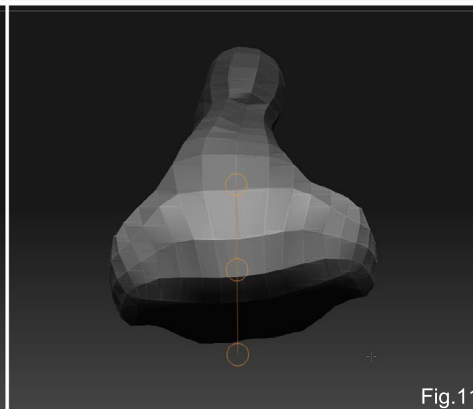
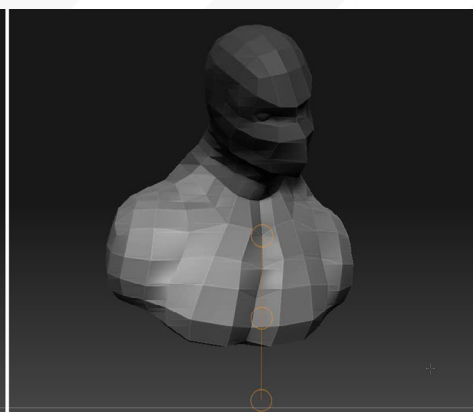
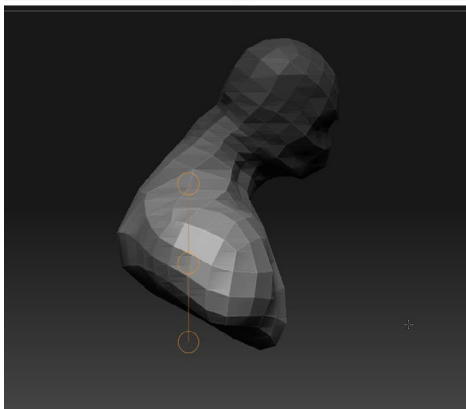
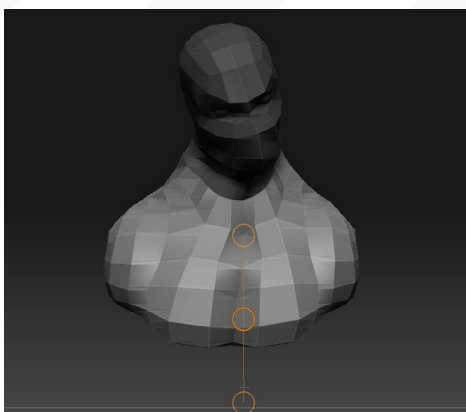


Fig.11

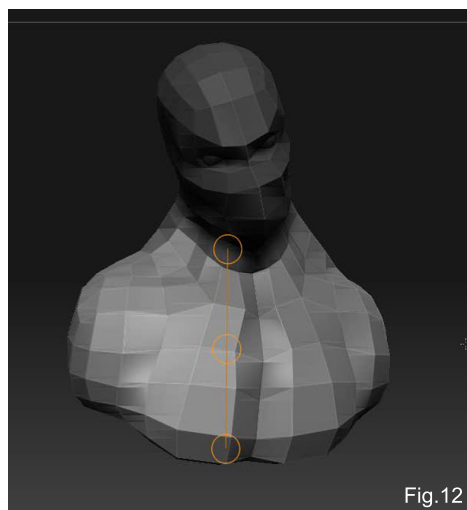


Fig.12

pose the torso of our model. Rotate it to one side from a front view a little, before aligning the action line along the spine and left-clicking and dragging in the centre circle to finish off our pose. Go back to your plug-in palette and hit the "TPose > SubT" button, and ZBrush will do all the work for you and will put each subtool back into its own place – posed and ready! Step each model up to its highest subdivision level and take a look at the pose (**Fig.11** and **Fig.12**).

## CORRECTING THE POSE

You will notice that, as we modelled our digital

sculpture in a front facing pose, some parts of the anatomy are now "off" after the posing (**Fig.13** and **Fig.14**). A good example of this is the trapezium; at one side it is slightly bulged out when it would actionably be extended. So go to these areas and put things right to match the pose itself. Work out if each muscle should be extended or contracted, and correct accordingly (**Fig.15**, **Fig.16** and **Fig.17**).

## SETTING UP A NICE PREVIEW RENDER

The model is finished now, but you can refine it further if you wish to tighten up any areas that you feel need it. Now there's not a lot of point making a nice digital sculpture if no one can ever see it but you, so let's set up a quick preview render and explain how the settings for them in the render palette work (**Fig.18**).

While this is covered in detail in the video that is now available free to accompany this series (more of that later!), I'll cover the basics for you now. Open the Preview Shadows section of your render palette, as this is where we will set

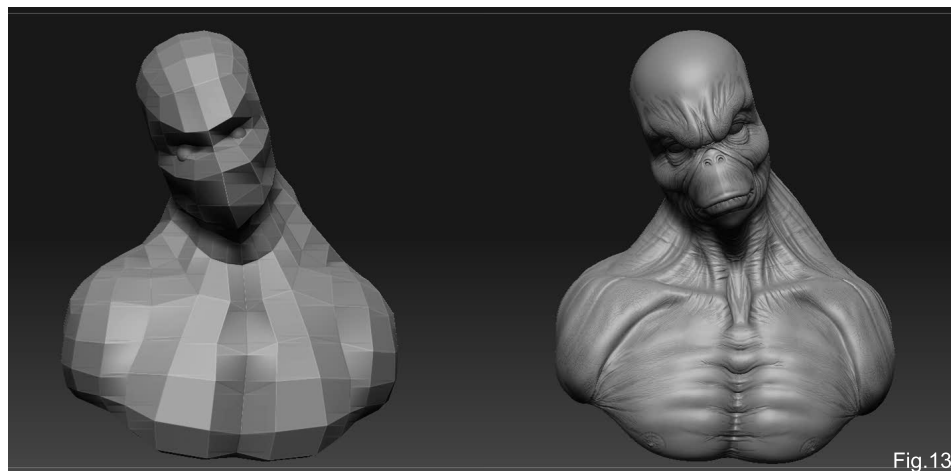


Fig.13



the look of the preview render (all Matcaps have lighting baked in, and as such, although you can use "best render" most times, it's best to set up a good preview as this makes best use of them. However, beware of mixing Matcaps as the lighting baked into each matcap can be very different!) (Fig.19).

**Length:** A longer shadow is softer; a shorter one is harsher and doesn't have the same length. So for outdoor-type lighting, set the length high; for indoor lighting set it low.

**Slope:** This controls the angle at which the light is perceived to be coming from. So a setting of "0" is directly above and arches lower the higher the number, as shown in the images.

**Depth:** How far away is it? Lower means closer; higher means further away (and hence more in shadow/dark).

## ANTI-ALIASING

To get a good quality render, exit the edit mode and clear the canvas by hitting Ctrl + N, then double the size in your document panel (assuming you want a render at the same size that you've been working at) (Fig.20). If you

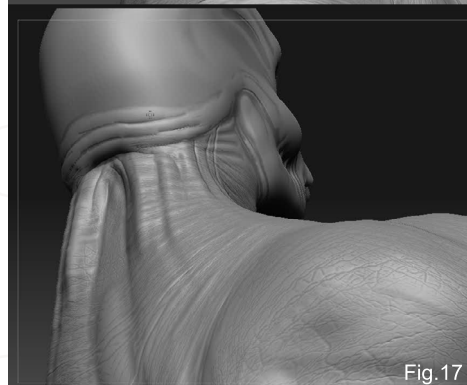
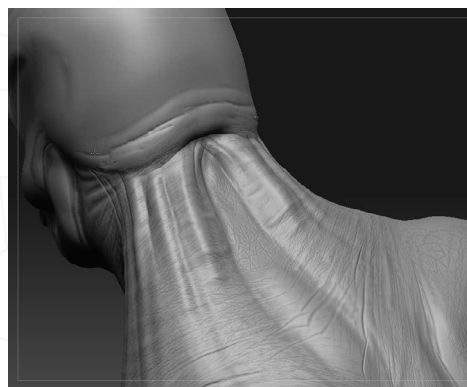


Fig.17

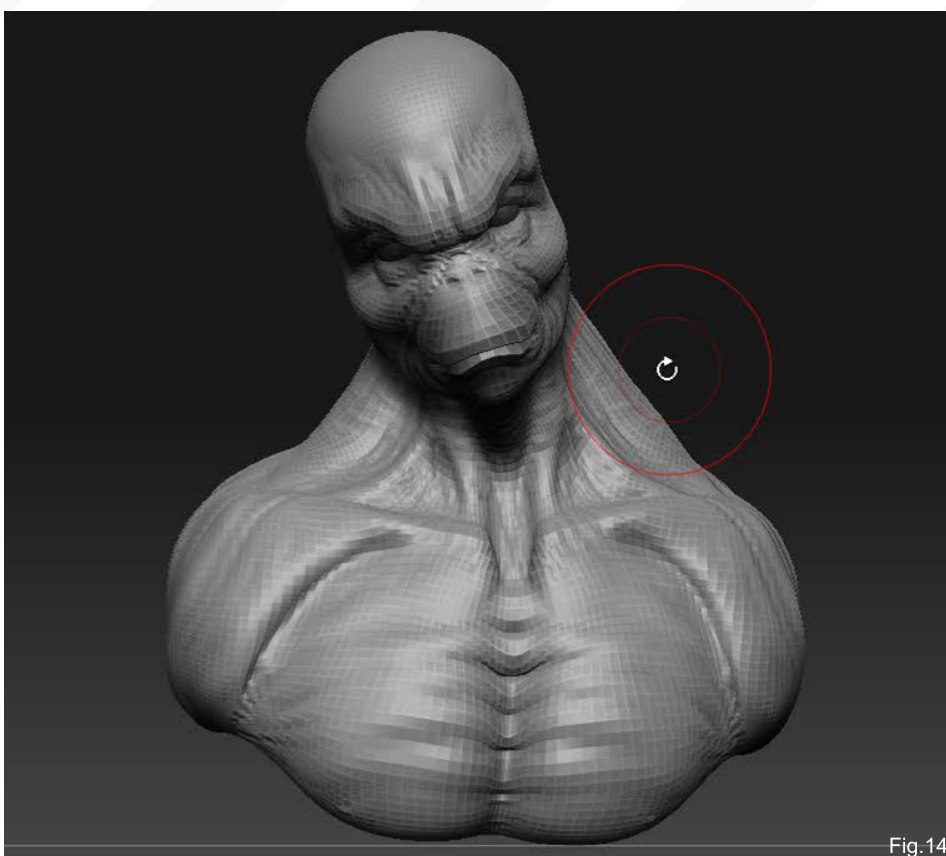


Fig.14

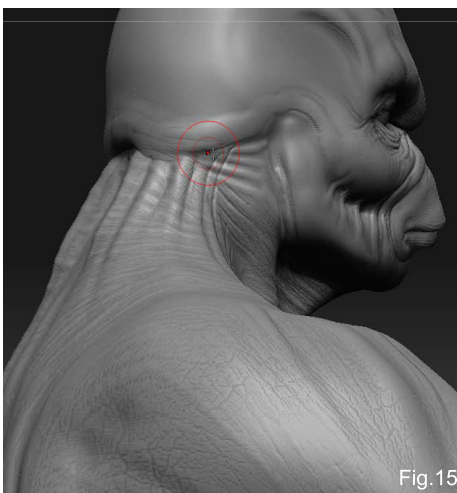


Fig.15

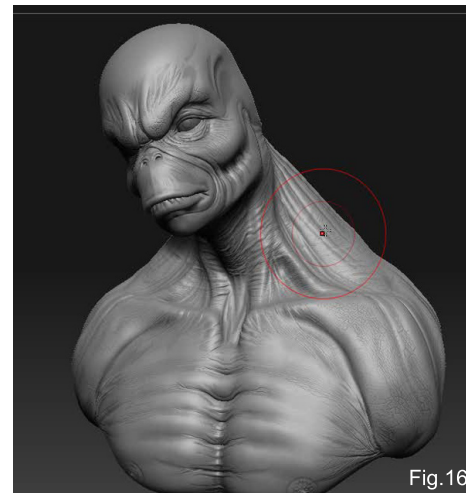


Fig.16

want one that's bigger, adjust this accordingly. Draw your model back on the canvas and position it (after making sure you've pressed the edit button!). Now for the important bit: hit the AAHalf button and this will reduce the size of your render by 50%, and the anti-aliasing will make the whole thing a lot smoother and of a higher quality. You may notice that it also softens the details; this is one of the reasons why I sculpted a bit deeper and harsher than you may have expected at the time. It's a simple way of compensating for the anti-aliasing effect!

Once you are happy with your render, export it by going to the document palette and hitting the "Export" button.

## THE VIDEO

As I've mentioned a few times in this series of articles, while working on this model I recorded the process directly after the creation of the ZSphere rig to the text that you see above. It seemed a great shame for this to stay on my computer, eating up space and gathering dust, so the guys at 3DCreative have kindly agreed



to host the entire video for free. So if you've had problems with any part of the workflow in these articles, then there are no more excuses (joke!). It's one of the longest free videos there have been in quite a while, so make sure that you download it and I'd like to thank everyone at 3DCreative for making it available for those starting out in ZBrush!

## INSPIRATION

So is this technique any good for other models, or is it simply a "one trick pony"? Well, to answer any nagging doubts you may have, I'll close this series with a couple of speed models that I've done using the exact same base mesh and workflow. Neither of them took more than two hours from beginning to end, and hopefully they'll show that everything from humanesque monsters, to more warped and strange ideas, can be created using this method (in fact, there's no limit to what you can make – the only limits are the ones you impose on yourself!) (Fig.21).



Fig.20

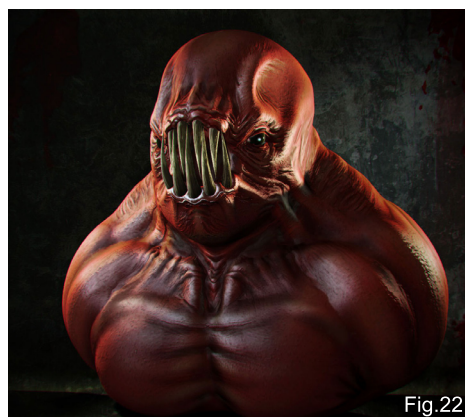


Fig.22



Fig.18



Fig.19



Fig.21

I hope you've enjoyed this series, and if so I'd like to plug my book *Essential ZBrush*, which will be available soon from Wordware Publishing, and will be found in all good book shops (it's also available on pre-order from Amazon). It covers the creation of an entire scene using ZBrush, along with how to get your model, normal and displacement maps etc. into Maya and 3ds Max, as well as covering ZBrush from the ground up. There's everything from hard

surface sculpting to organic and environment sculpting, so please support an artist today and buy a copy for yourself (maybe even two!). Many thanks! (Fig.22).

**WAYNE ROBSON**

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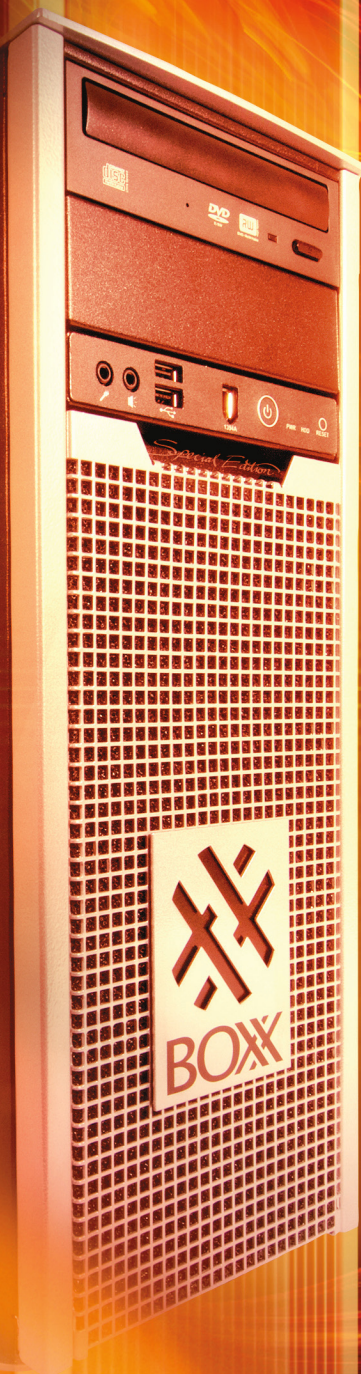
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# Animation

## General Tips and Techniques: Part Four

This is the final tutorial in the series about the general approach to an animation shot, and the factors you should bear in mind when creating 3D animation for a film production. Enjoy!



# Animation

## general tips and techniques

### INTRODUCTION

The most common way to animate is to blog your animation first; this is normally given to you with the animatic. With a few keyposes everyone gets the idea of what is happening in the scene. And then you can start to animate, either using the "straight ahead" or "pose-to-pose" method, or a combination of both (see previous issue!).

In order to get a feeling for your animation, you must always start with the main action and the most important movement. You want to get to the point where you think, "This is going the right way; this is what I had in mind." You have to be sure about the timing, weight and believability of your character and your animation! If you are satisfied with this then you can go deeper into the animation. This is the part where you have to think about secondary actions, overlapping actions and follow-throughs. And that's what we are going to talk about here in this article!

So, what is a "secondary action" and an "overlapping action and follow-through"...



Fig.01

### SECONDARY ACTION

In our simplified example (**Fig01**) you can see a ball with a tail. We are going to animate the ball falling down. The first step is to animate the main movement: letting the ball fall. Now it looks like the ball is going from one point to another, but without any sign of speed, it is uninteresting and boring. To get a feeling for the speed of the ball, we could put something in the background, like clouds or a tree, to show the movement in relation to the background. But the more interesting way for an animator to achieve this sense of movement is to animate the tail of the

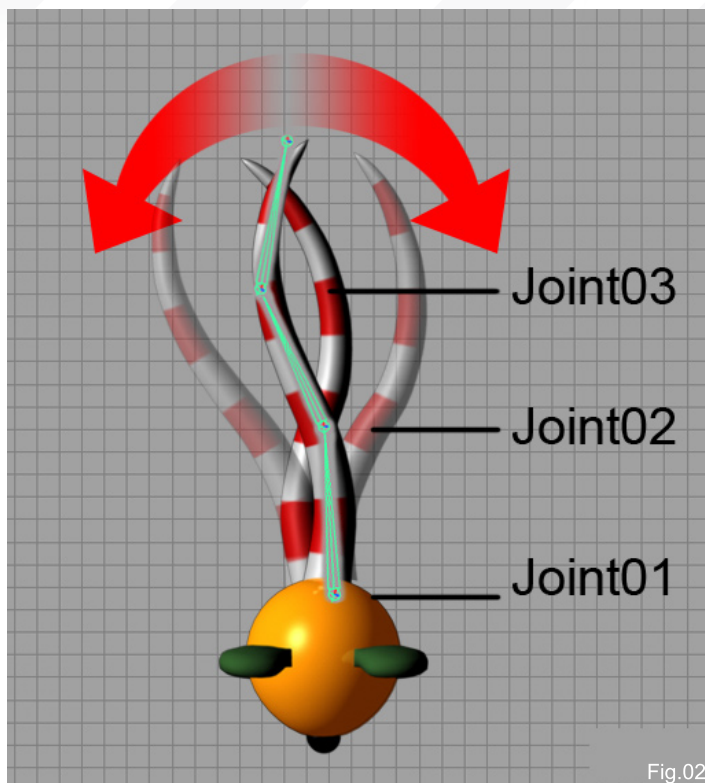


Fig.02

ball (**Fig02**). To support the main action and get a better feeling for the speed of the ball, we let the tail swing, as it would naturally because of the air resistance. Depending on the tempo of the tail, you can show the ball just falling or rushing downwards. In our example, the swing of the tail is the secondary action; it helps us to understand the animation and to get a better feeling for the speed of the ball.

To get a fast result we loop the animation, so we only need three keys for every joint. If you make the loop about 16 frames long, you can make the tail move quickly. Set one extreme position at the beginning and the end; for example, rotate it to the right. It should be in the exact same position and the best way to achieve this is to copy the key. In the middle of the loop, set the other extreme position. smoothing the curves out to get a constant, fast swinging action (**Fig03**). Now you just need to replace the joint in the timeline (**Fig04**) to get a wavy tail!

Having the right idea for your animation, or strict guidelines for the scene, is necessary in order to plan your movements first. If you know what

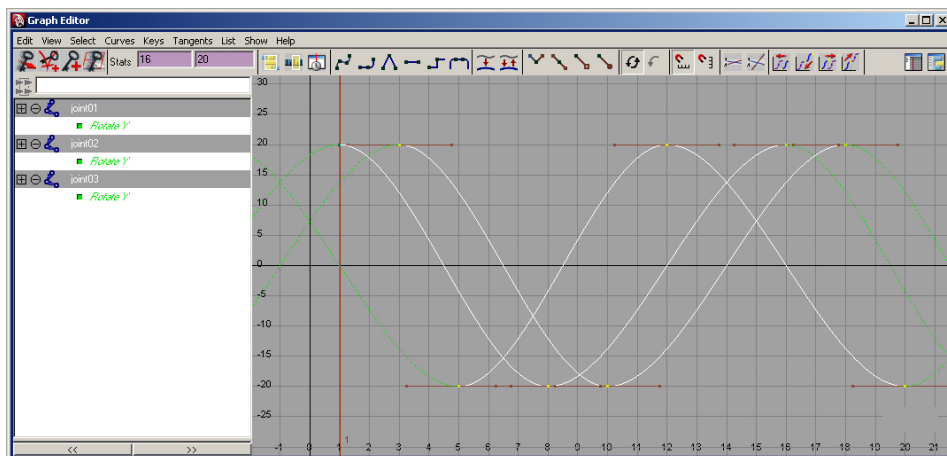


Fig.03



the scene is about and what the character is going to express, then you have to think about what is the important element that will give the animation its life. A scene doesn't just get interesting once the audience can read the emotion of the character and empathise with it, otherwise there would be no need for us to ever watch a movie!

The main method of expression, other than verbal language, is body language. Since we spend the majority of our days around other people, we are adept at reading faces and understanding body language, even though we may not really think about it. In this way, your audience has an expert eye for understanding a specific attitude of the body or the slightest movement of a finger or an eyebrow, so unlike the viewer who absorbs every movement subconsciously, an animator has to be accurate about the animation and choose every single motion very carefully. The real challenge for an animator is getting the audience to feel what the character is feeling.

A normal running character expresses just a character running, but if you let the character look back over his shoulder with a scared

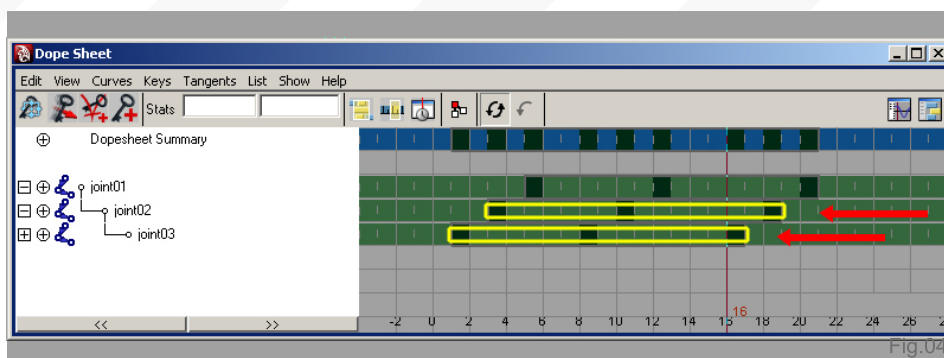


Fig.04

expression on his face, then you'll know that he's running away from something he is afraid of. These secondary actions are the most important instruments in giving your character more life and letting the audience care for him.

If you are planning your scene then you have to be sure what the main movement is, because it is superordinate to the secondary action. In **Fig05** you can see a thoughtful scientist walking around and scratching his forehead. The pace – up and down – is the main movement of the body; the scratching and his meditative face are the secondary actions, and he appears to be searching for a solution in his head. You should keep in mind that the movements need to be clear and the secondary action in particular should be readable, with an obvious silhouette and a camera position that befits it.

## OVERLAPPING ACTION AND FOLLOW-THROUGH

Another very important element of any believable animation, is the "overlapping actions and follow-through". The basic principle of this is that not everything happens at the same time. If a character is moving from one position to another and everything stops at the same time, it looks unnatural. Watch your surroundings closely and you will notice that there is always something that is dragging behind the main action. A running dog (**Fig06**) for example, whose ears normally hang down, will drag his ears through the air as he runs. The energy comes from the running body; if the dog suddenly stops, the energy moves to the appendages and the ears follow-through the until they settle back in the normal position.



Fig.05



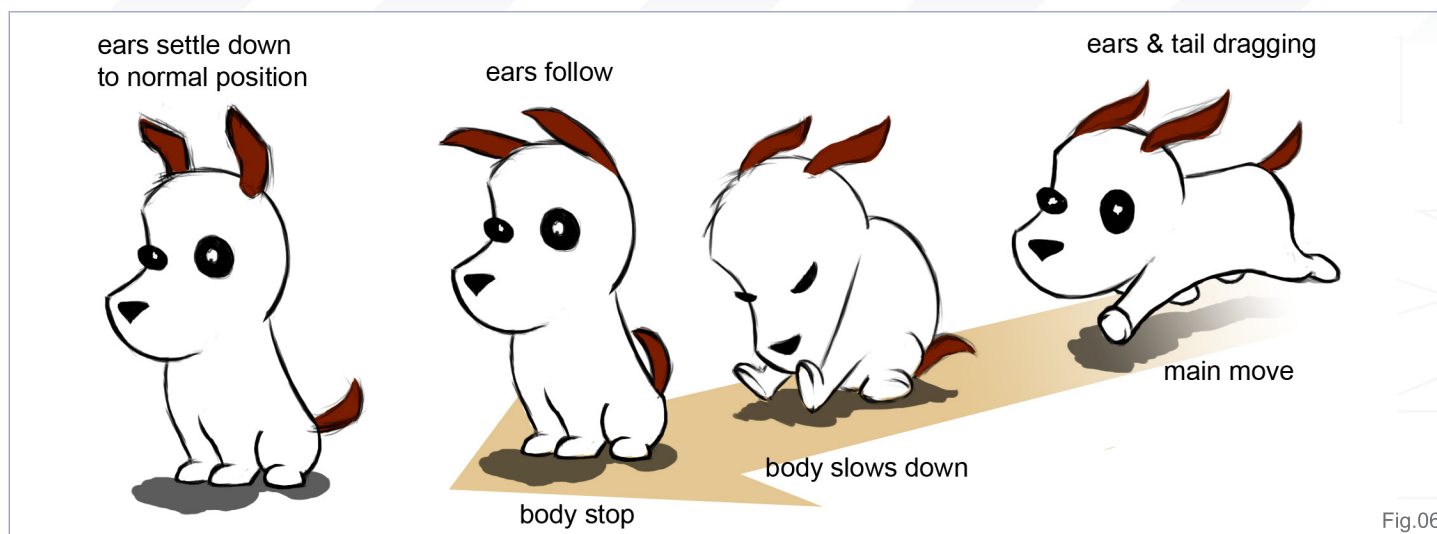


Fig.06

In **Fig07** you can see a rat turning his head. The main movement and the energy come from the head, and everything that is not attached closely to the body drags. But the ears, nose and scarf do not start at the same time; at the beginning of the turn the head starts moving slowly, so lighter appendages like the scarf will drag first. The ears and the nose have more weight so they will not drag until the head gets to full speed. "Overlapping action" here means that one part starts first and then other parts follow. Again, avoid moving everything at the same time – it can be stressful for the eye! This also means that, for the overlapping action itself, the animation of the ears and the nose become more interesting and clear if they have different weights, too. The ears drag before

the nose. The same principle applies for the "follow-through" at the end of the animation. The head stops and the appendages arrive later and keep on going before they finally settle down in the normal position – first the scarf, then the ears and eventually the nose. This final example is cartoony and over-exaggerated, although it remains believable because of the different weight and compounds of the body parts.

Certainly any 3D software provides an opportunity to move those parts physically correctly – you just have to animate the main body parts and everything else will be calculated by the computer! It is a big advantage of 3D letting the computer animate things like hair, fur or clothes, and it definitely saves you a

lot of time. But, if you give up too much in the physically correct properties then you will lose the chance to give your character and your animation accents and personality. With overlapping actions and follow-throughs you are able to go over the top, and for this purpose you add more weight and reality to your animation, which we surely give your character more life!

## WALDEMAR FAST & ROBERT KUCZERA

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Or contact them:

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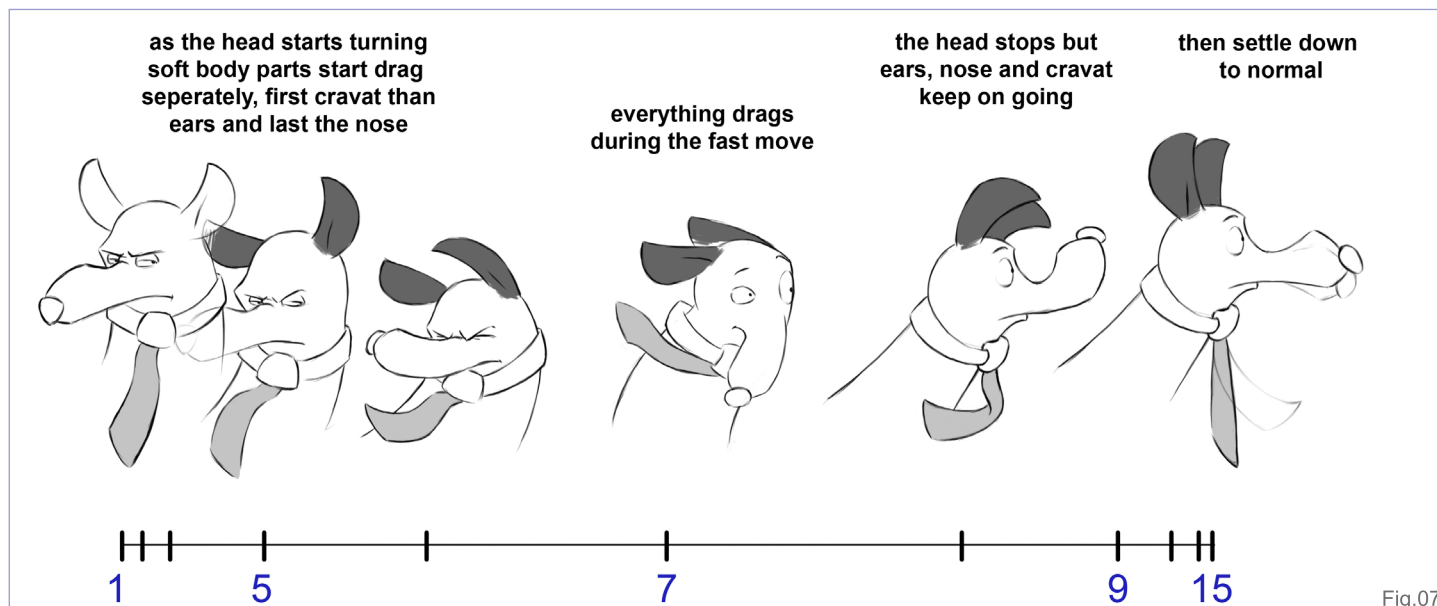


Fig.07



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Pursuit of

# Perfection

making of by Jesse Sandifer

"I DON'T LIKE FIGHTING THROUGH A SCULPT WITH JUST THE STANDARD BRUSH BECAUSE I TEND TO WORK FASTER WITH SPECIFIC TOOLS. THERE'S NOTHING WRONG WITH USING THE STANDARD BRUSH; IT'S JUST NOT MY WEAPON OF CHOICE!"

**QUIET  
PLEASE**

**MASTER  
ARTIST  
AT  
WORK**

Read on to find out  
how Jesse Sandifer  
used ZBrush to create  
this image ...

**SANDIFER**

11/2007



# Pursuit of Perfection

## CREATED IN:

ZBrush, 3DMax, V-Ray

The original intention of this project was as an entry for CGSociety's "Strange Behavior" Challenge. I also hadn't created a personal image in a long time, due to being heavily involved in getting a studio started, and I felt like it was time for me to really go for something crazy – and this challenge fit that mould nicely!

The brief of the challenge was to create something that depicted "strange behaviour", and I figured that a big, crumbly rock with arms trying to sculpt itself into a sphere would be pretty strange! I wanted the action to appear to make sense when the viewer first looks at it, but then after second thoughts they would

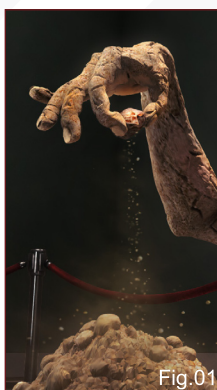


Fig.01



Fig.02

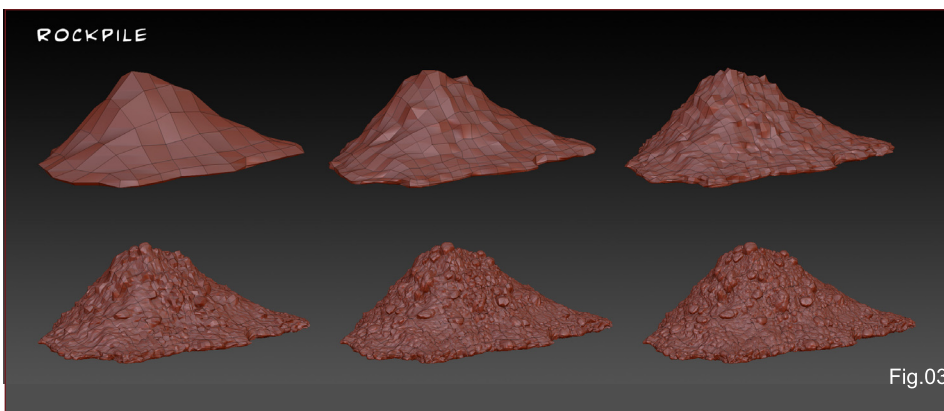


Fig.03

realise that Mr. Rock would never be able to achieve such spherical perfection (Fig.01). It's just not physically possible for him to do! This is how I got the name for the image, "Pursuit of Perfection" (Fig.02).

I also thought it would be fun to make him into an artist of sorts, complete with a beret, a measuring pencil, and a sphere as his subject on a satin pillow and wooden stool. I wanted to experiment with techniques in ZBrush to create the rocky textures that would contrast with the smoother worked-over parts of Mr. Rock. It needed to have that transition from completely rough to nice and smooth. You know, to show that he was kind of getting somewhere with his efforts. Plus I needed to figure out a way to get all the arms doing something individually, in a way that made sense.

Of course, my original aspiration was to do my best to win the challenge, but there were so many great artists contributing that, at times, I felt like Mr. Rock himself! I encountered a lot of those wonderful "learning moments", where you have to scrap a large amount of your work in order to finish the project. There was only so much my computer could handle and so I ended up having to scrap some good, hard work. Of course, ZBrush handled these details fine, but I ran into problems in 3ds Max later on (I'll get

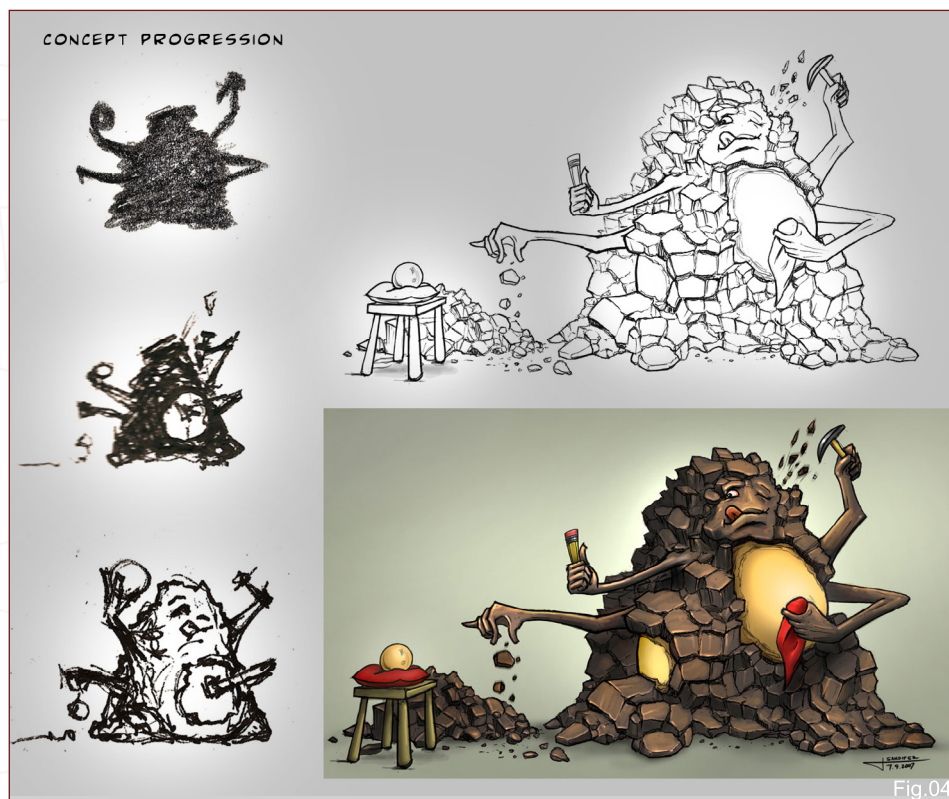


Fig.04



into this more later). I also originally wanted to make him animatable in 3ds Max so that I could do a funny short movie with him as my animation entry. Unfortunately, work projects took hold of my time and I had to massively reduce the scope. But nonetheless, by the grace of God, all of this crazy sculpting paid off when I won the "Best Texturing" category for the challenge, which was one of those mini-awards they handed out for achievements in certain areas of the production of an entry. I took great honour in this as I truly slaved away at making this character (**Fig.03**)!

So for the creation of this character, I needed to think of a concept. I had the idea in mind but needed to spit it out onto paper (**Fig.04**). As I was drawing it, I realised that I was getting myself into a heap of trouble with all of the rock, stone, and cracked surfaces. But I knew ZBrush could handle the job! So once I got the concept figured out, I went into 3ds Max to get Mr. Rock formed out and to get somewhat of a shape that had a decent amount of polys and edgeloops in the right spots, as well as cutting in where the smooth sections would go.

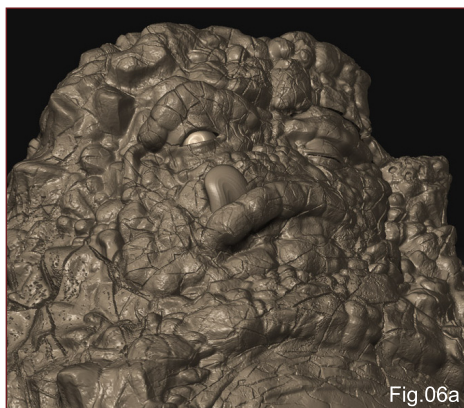


Fig.06a

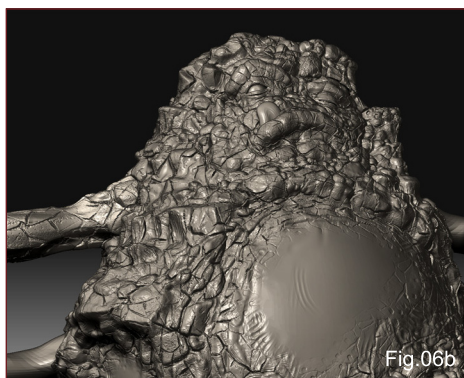


Fig.06b

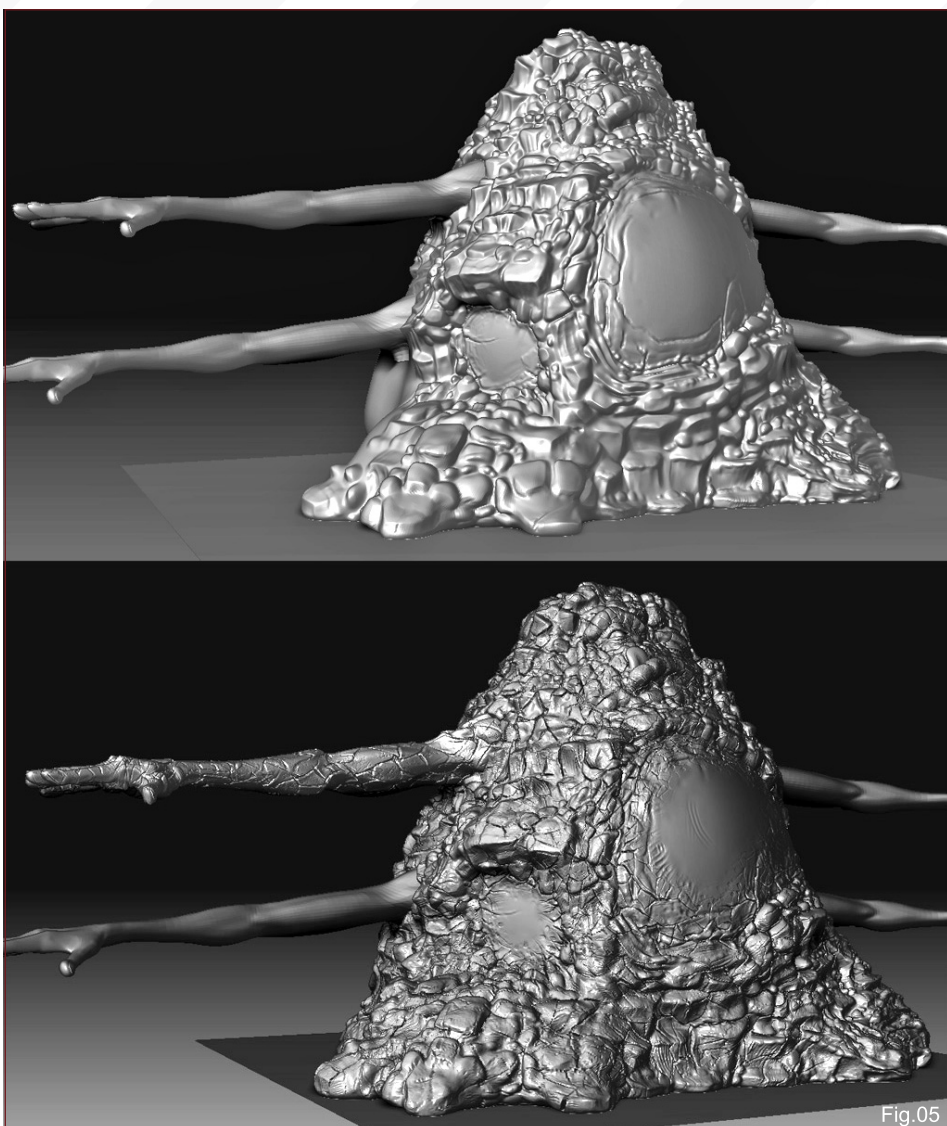


Fig.05

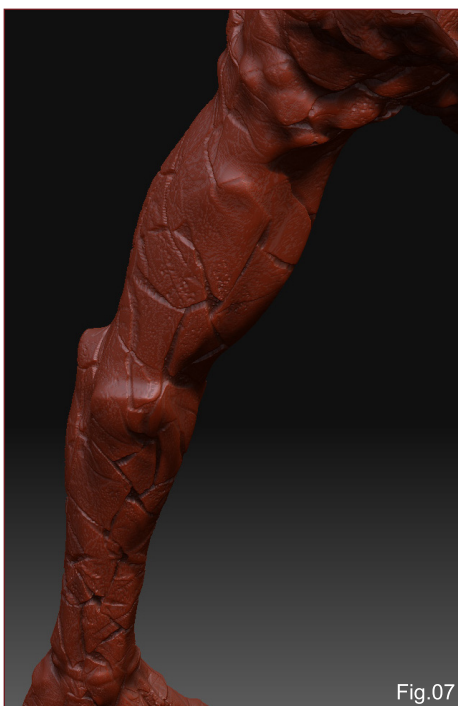


Fig.07

I needed to keep a lot of elements separate so I could manage to get the displacement and texturing at a high enough resolution later on. So he got split into his face, arms, a smooth belly area, and then the rest of his body, to glue it all together. Once I figured out how tall and wide I wanted him, and had everything pretty much at a good low-res level, I took it over into ZBrush. This was where a huge majority of my work was done. When I work, I do things in big layers that start on a broad level, and then layer by layer get hacked and tweaked away into the final piece (**Fig.05**). I've learned the hard way about getting too detailed early on in the process. If you do this, you just end up with something that looks like it got pieced together like a Frankenstein project or something!



So my first efforts went into getting the major areas sculpted, so I could get his silhouette right. I didn't want the surface of Mr. Rock to have that feeling of a giant boulder with small details sprayed on. I really wanted him to have that chunky feel and overlapping non-linear flow. I wanted it to look organic, but in a rocky way, if that makes sense? Different sized rocks, shapes, cracks, etc (Fig.06a, Fig.06b & Fig.07). Since the biggest chore for the whole project was getting the surface and texture right, I thought I might dive into how that look was achieved and which brushes I used for certain strokes. There's a bunch of ways and techniques to make rocky stuff in ZBrush, so keep in mind that this was just my way and personal choice... at least for now!

The main brushes I used were (Fig.08a – g):

**Inflate** – Used to quickly extrude the surface and lay in basic forms and rough overall sections.

**Clay Tubes** – Used to get an easy texture onto the stone and to define the rock in a less smooth way.

**Move** – Used to push and pull the forms around and to achieve concavity (curve inwards) and convexity (outwards) with the rocks. This also helped with defining the silhouette even more and in starting to move things to different levels so everything wasn't on the same elevation.

**Pinch** – Used to make sure the rocks look



Fig.09a

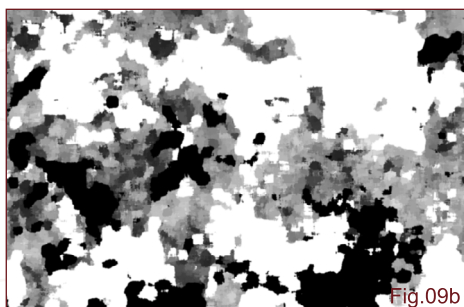


Fig.09b



Fig.08a

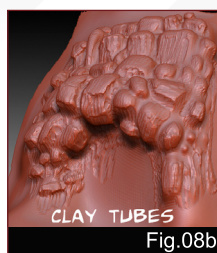


Fig.08b

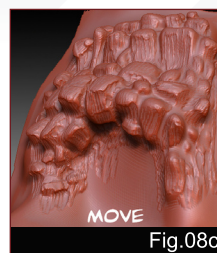


Fig.08c



Fig.08d

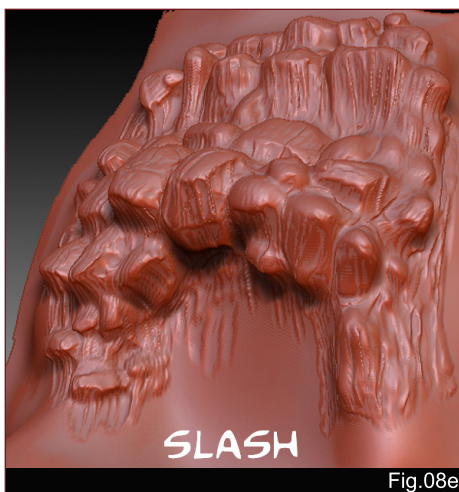


Fig.08e

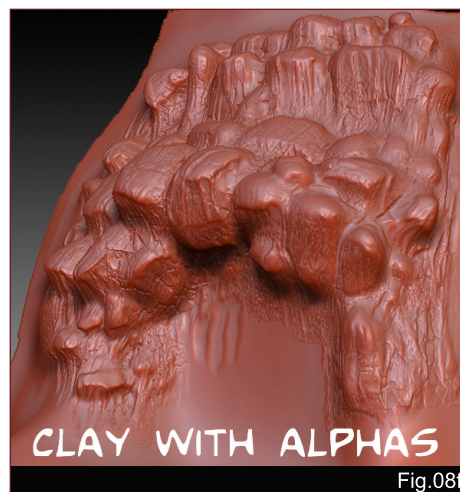


Fig.08f

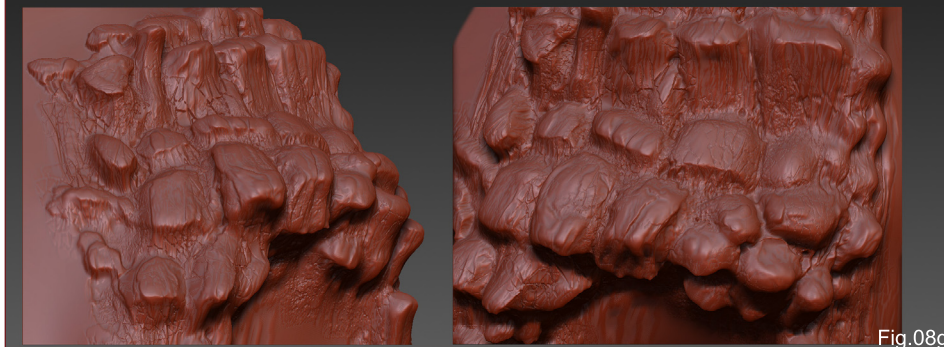
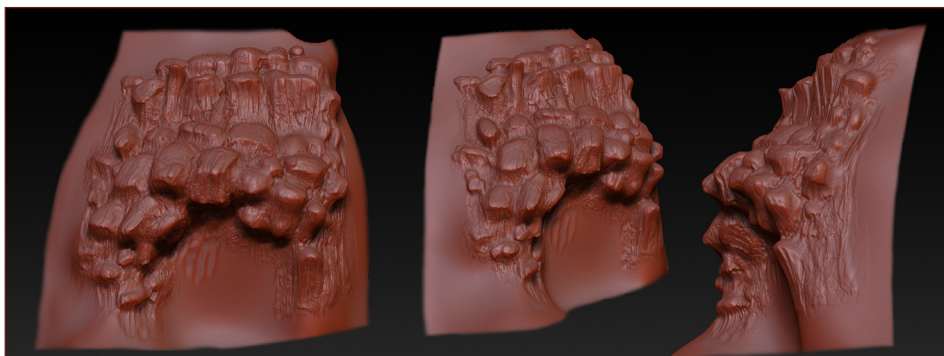


Fig.08g

like they were derived from the same natural process, meaning that they needed to be neighbours and not just a bunch of extrusions. So this brush helped in getting everything to have that collective feel. I also used it to define the edges of the rocks more.

**Slash1 and Slash2** – Used to dig in some cracks and separate out of some the rock transitions.

Also good for making little scratches and giving irregularity to the rock surface.

**Clay** – Used a couple of custom and default alphas to apply a fine layer of surface texture over the rocks, so that it didn't look too hand-made (Fig.09a and Fig.09b).

**Ram** – Used to smash in some pits and deeper crevices.



**Smooth** – I like to use this brush so I can get controlled smoothing instead of the simple Shift + click method that goes pretty much full pressure. When I use the smooth brush method, I can have a more varied level of smoothness so that I don't destroy all the hard and cracked surfaces. I didn't want the rocks to look like they got smoothed-over or polished.

I used all these brushes in this general order, but definitely switched between all of them to get the right look. I tried to get each of the brushes to do their intended job and never forced one to do it all. I don't like fighting through a sculpt with just the standard brush because I tend to work faster with specific tools. There's nothing wrong with using the standard brush; it's just not my weapon of choice!

I had also never used the Polypainting feature of ZBrush before this challenge, and I decided this was a great time to do that. Since he was all rock it was going to be easier to spray on a basic texture and then paint custom treatments to define the rockiness even more (**Fig.10**).

After I finished that, I started moving on to the export process. One of the learning processes I had with this project was that displacement used a lot of resources. Since I needed to render this image at a high resolution, my displacement was crashing my computer no matter what I did.



Fig.10

So, after many tries with different approaches, I had to scratch that because of my planning error and decided to just use a high-res mesh in Max and supplement it with bump maps and good GI lighting. It was definitely a frustrating time in the project for me, but I was just running out of time to figure out another solution and I wanted to complete the image strongly. I had essentially lost most of the fine details that I had created in ZBrush, and that took me some time to get over! At this point, I had my model in 3ds Max. I rigged up the low-res model because, as mentioned, I originally intended to do an

animation with the character (**Fig.11**). If I had known that I was going to run out of time for the animation portion of my concept, then I guess I could have just used ZBrush's Transpose Master to pose him. But I also needed to set up a camera in 3ds Max for the final shot, so I knew that I would need to be able to tweak the pose in individual areas like the arms and define how much his head should be turned, etc. I then used the Skin Wrap modifier on the high poly mesh to follow what the rigged low-res mesh was doing. This way I could hide the high-res mesh, pose him in low-res, and then un-hide the high-res and be in the same spot as the low-res (**Fig.12**). Otherwise, I'd still be waiting for the high-res mesh to respond to my transform commands to this day! The Skin Wrap modifier was a life-saving feature to have.

For the composition, I wanted to have Mr. Rock look down his extended arm, with the pencil towards us in perspective, and have the sphere more in the foreground. I quickly modelled the other supporting props and set pieces, and before I knew it I had my major 3D elements ready to light (**Fig.13**)!

I use V-Ray for everything that I light, and this image was no exception. I wanted the lighting to

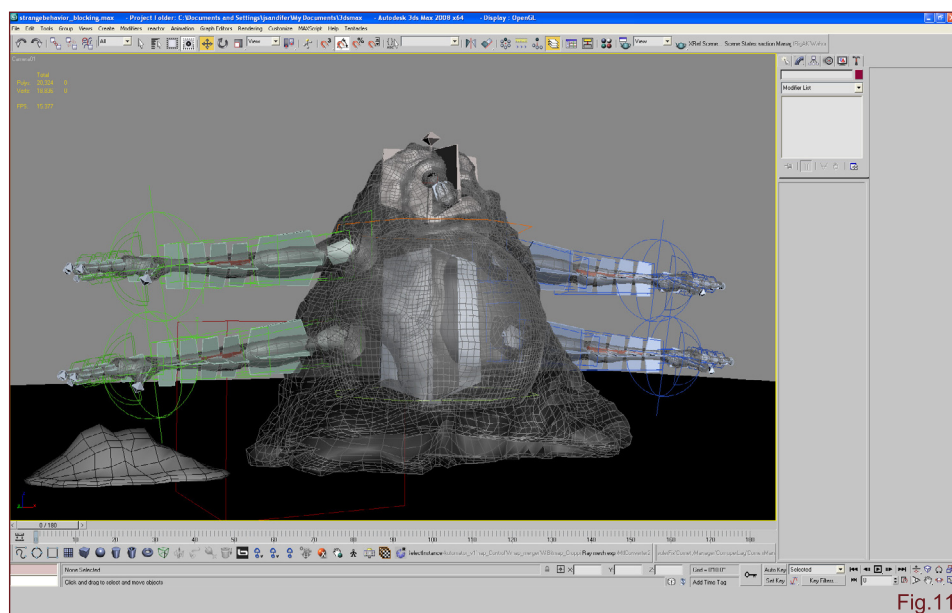


Fig.11



help tell the story just as much as the modelling, so I needed to make sure I placed the lights in just the right places. The nooks and crannies were very important to me, and the lighting direction needed to capture those at the right angle so that they weren't lost in the big mass. I placed a spot light directly over Mr. Rock and the sphere, and kept the fall-off somewhat tight to make sure I kept the focus on them. I then added a couple of rim lights behind them, a fill light off to the right of the camera, and a couple of extra spot lights to highlight the sphere, the stool and "Quiet" sign. Finally, I added two more lights which washed the back walls to achieve a bit more of the overall mood (Fig.14).

Once I got the image rendered, I took it into Photoshop and started doing some basic colour correction work, tweaking and image enhancements (Fig.15). I rendered out an ambient occlusion pass of the scene using Mental Ray, and used that as a Multiply layer at 50% on top of the render in Photoshop. I then began to refine the lighting in certain areas by burning and dodging on a layered copy. I like to mask out main elements

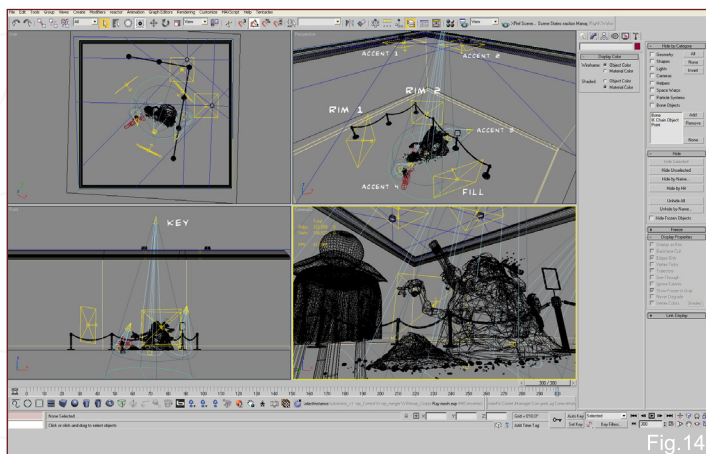


Fig.14

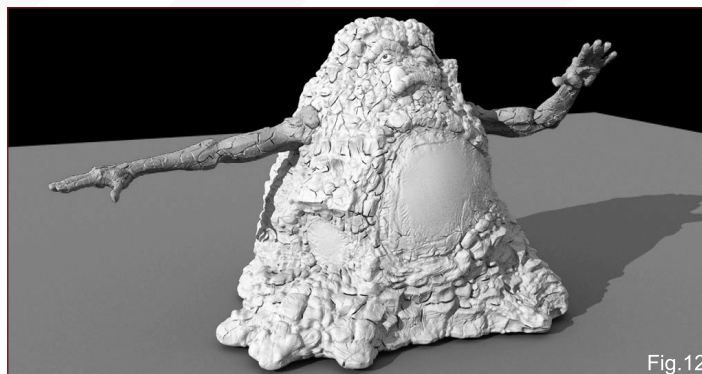


Fig.12



Fig.13

and separate them out so I can have freedom in changing them easily. I used this technique on many elements in the scene. I changed the colour of the back walls and ceiling to make the foreground pop out more, added some crumbling on one of his left hands, motion blur on the hand with the hammer, some dust and spray, and finally added a slight glow to the brighter areas, as well as the lights in the background (Fig.16).



Fig.15



These days I rarely try to get this all correct in 3ds Max and V-Ray. I like to give myself a good starting point to work from in Photoshop. In essence it's a painting, and I'm just using these pieces of software to achieve a final result. In my earlier days, I would try to get it all absolutely perfect in 3D only, and would waste a lot of time trying to figure out how to technically get it all flawless. You can get there light years faster by combining 3D and 2D, in my opinion. Of course, there are certainly artists out there who do it all in 3D with very minor corrections in Photoshop and achieve amazing results. This is just the way I like to do it. It all depends on the project I guess. If I was doing an animation, I'd probably spend a little more time in 3D, but I would still end up tweaking it with masks and passes in post-production, so it would be the same principle there, too.

So at this point, the image was done. I could probably have hack away at it forever, but you have to find a stopping point and be pleased with it as it is. Sure, I can see some weak points with some of the composition now, and there are some things in the scene that I wish I'd had more time to tweak. For instance, I'd really like to have managed to transfer a lot more detail in Mr. Rock from ZBrush to 3ds Max (grr!), but I'll just use those mistakes as a learning experience and apply them to the next project that I work on.

So that's how I made "Pursuit of Perfection". I hope to create more images in the near future and push my artwork to the next level, and I'll do my best to make leaps and bounds every time.

Thanks!

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Or contact:

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Fig.16



# nPower CAD Translators for Maya

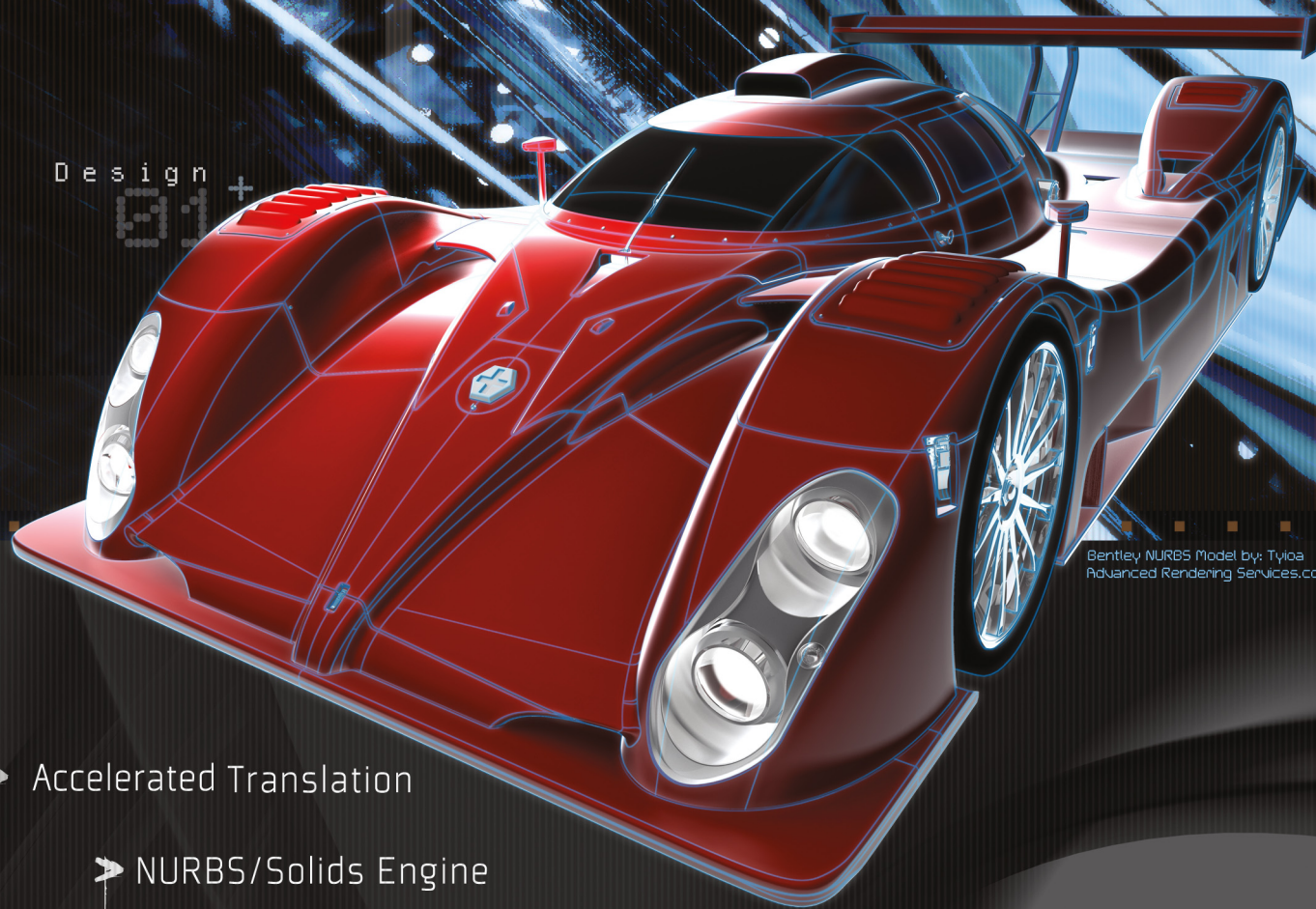
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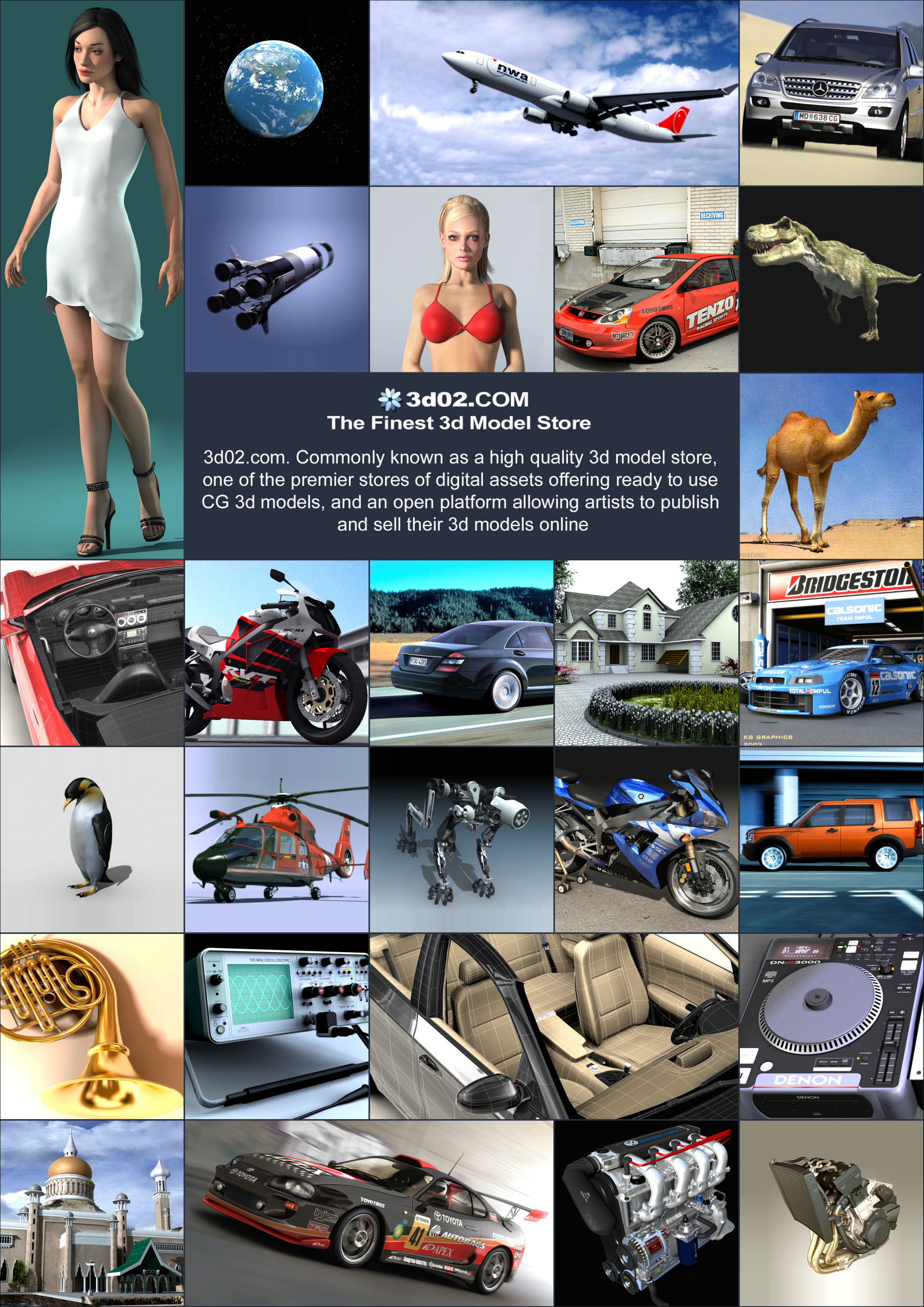
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CAN PRODUCE VERY HIGH  
QUALITY RENDERS IN  
SHORT TIMES."

For all of you that love your architectural  
visualisation images, we have an excellent  
example for you here by 3D artist Giraffe. Follow  
how she creates this sunny haven in 3ds Max.

# Visualisation Architectural

Making of by Giraffe



# Architectural Visualisation

## CREATED IN:

3ds Max, V-Ray, Photoshop, Onyx Treestorm

## INTRODUCTION

I produced this image for architectural visualisation purposes for a client. There have been, in total, 16 different camera shots (all static images) used for this the same project, and this particular image shows the pool area near the restaurant.

## MODELLING

I started with the modelling and building of the pool with a simple and basic poly-modelling technique (**Fig.01**).

### Arches

Here I would like to show how I made the arches with poly modelling, because this is one of the frequently asked questions that I receive in my mailbox and on the many forums from beginner artists (**Fig.02**).

### Trees & Plants

I modelled some of the landscape elements with ONYX Treestorm, which is highly-detailed software with many parameters for leaves, branches and trunks – and with this anything is possible (**Fig.03** and **Fig.04**)!



Fig.01

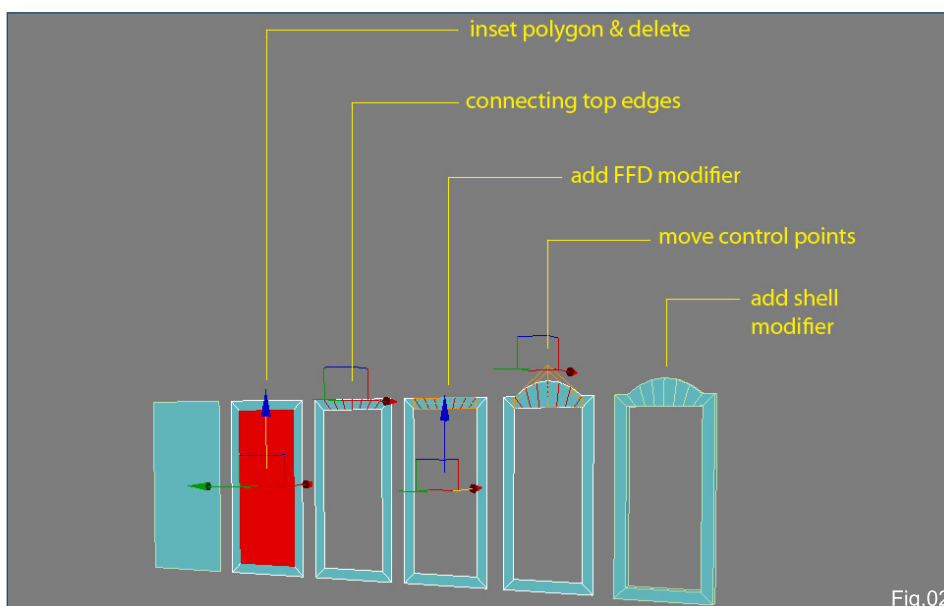


Fig.02

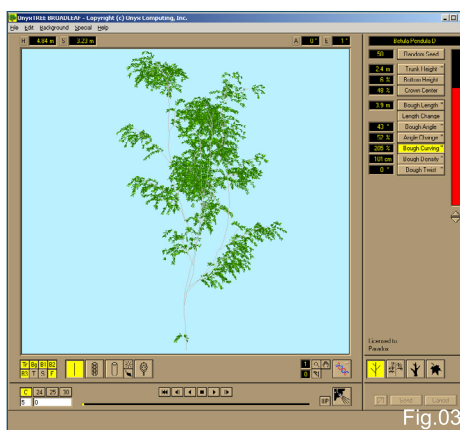


Fig.03

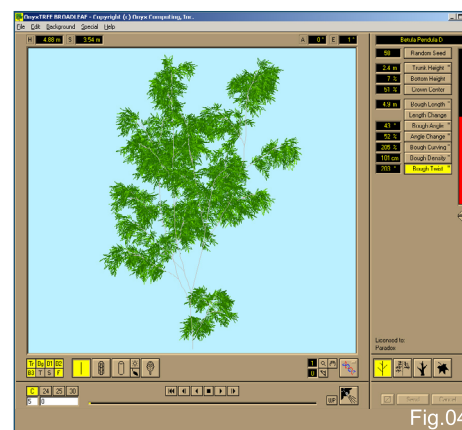


Fig.04



Fig.05

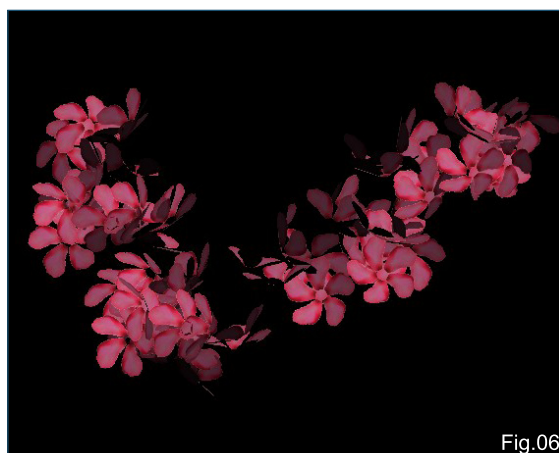


Fig.06

### Flower Begonvillia

First, I modelled a flower unit, which was made quite simply with just planes with opacity maps. I could then make clusters of flowers by simply cloning and transforming them with the move and scale tools (**Fig.05** and **Fig.06**).

I then modelled the trunk, again using Onyx Treestorm, and placed the flower units and cluster branches around the trunk (**Fig.07**). And here's the result after rendering (**Fig.08**).



## CAMERA SETUP

After all of the modelling was finished, I set up my camera. Since this was the pool-side render, I tried to show the pool and the life around it, and demonstrate how close to the beach it is. I thought that keeping a large area of water in the foreground would create a fresh look on the summer's day, and moreover would form a nice contrast of blue with the yellow-brown stucco on the buildings (Fig.09).

## LIGHTING

Before texturing, I set up the basic lighting for my scene with a generic material applied to all objects. I prefer to see how my shaders and textures react with light as I progress, and then make the necessary tweaks (Fig.10).

I preferred a midday lighting scenario for the pool, and I used V-Ray as my render engine. V-Ray has many great tools: VraySun and VraySky, and the VrayCamera also acts like a real-world camera with many parameters. So after setting up the lighting I could then adjust how much light I wanted in the scene with the camera's f-stop shutter speed parameters (Fig.11 and Fig.12).

I used gamma correction at a value of 1.8. This simply changed the curve of transition from white to black, i.e. from bright zones to lighter zones. The reason I didn't use 2.2 was simply

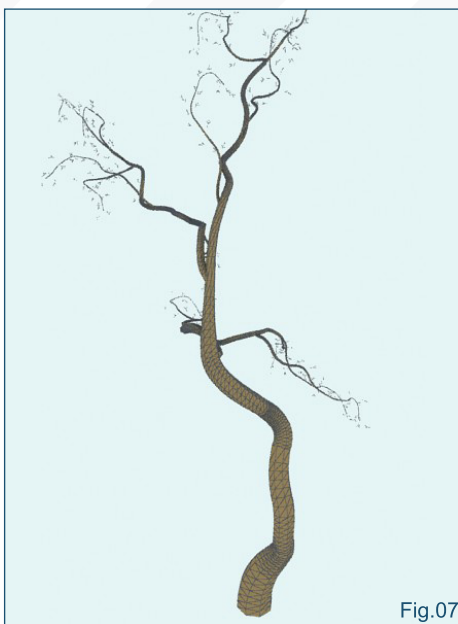


Fig.07

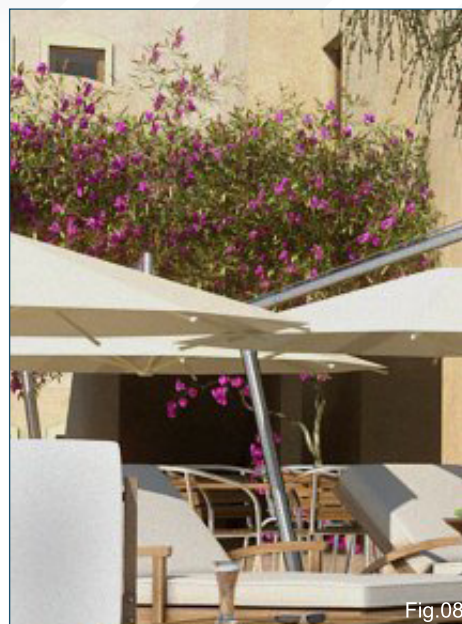


Fig.08



Fig.09

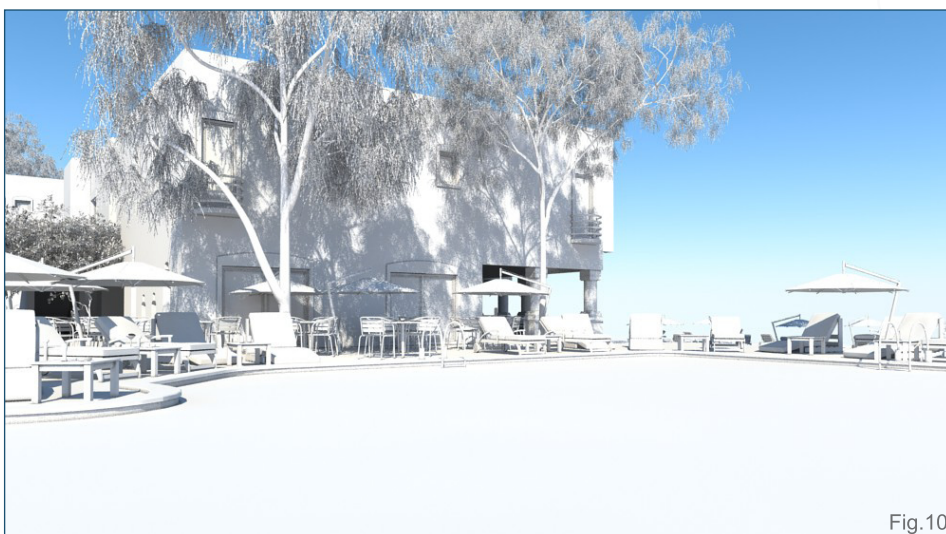


Fig.10

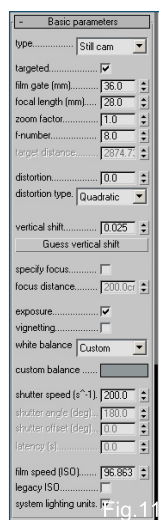


Fig.11

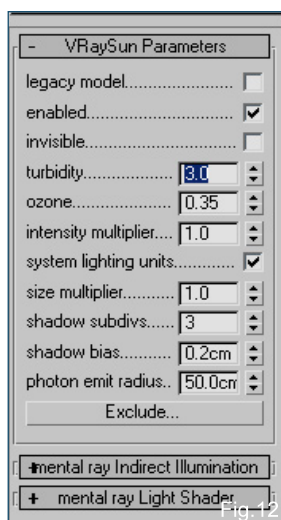


Fig.12

because my eye liked it better this way.

## TEXTURING

Wall Shader (Fig.13)

For the wall, I firstly made the texture by combining a few photographs in Photoshop, and then adding some dirt with Multiply and Overlay layers to achieve this texture (Fig.14). I then



added some reflections, glossiness and bump maps (Fig.15).

### Water Shader

This shader was a very easy one, although many people ask about it so I decided to mention it in this tutorial too. It is simply a refractive material with a falloff fresnel reflection map, so that it reflects accordingly as it is parallel to the camera angle. Here are the settings (Fig.16).

## RENDERING

As I mentioned before, I used V-Ray for the rendering. I think V-Ray is a great render engine and it can produce very high quality renders in short times. So I usually use very basic settings to have short render times, but I remain very happy with the quality. Here I would like to show my V-Ray settings for this render (Fig.17 & Fig.18).

## POST-PRODUCTION

After the final render, I did a little post-production work on the image: I added some foliage, hand-painted and retouched some details, made some colour variations, adjusted

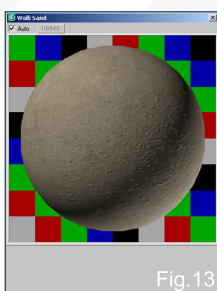


Fig.13



Fig.14

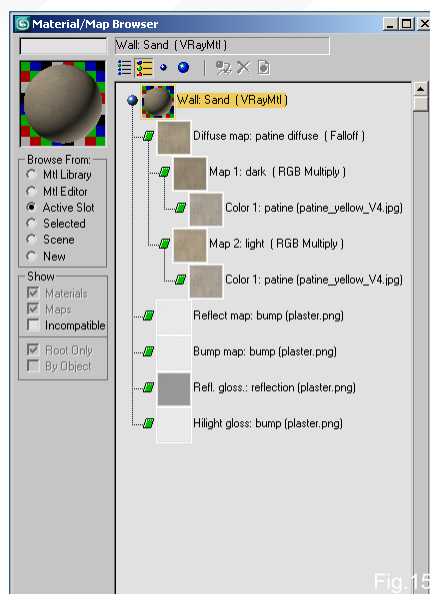


Fig.15

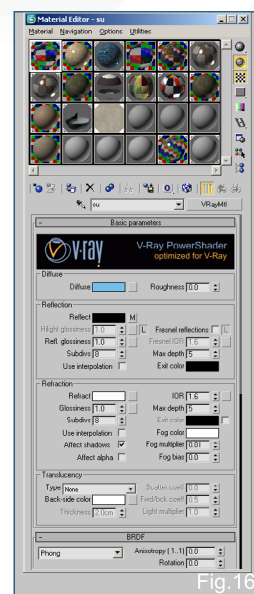


Fig.16

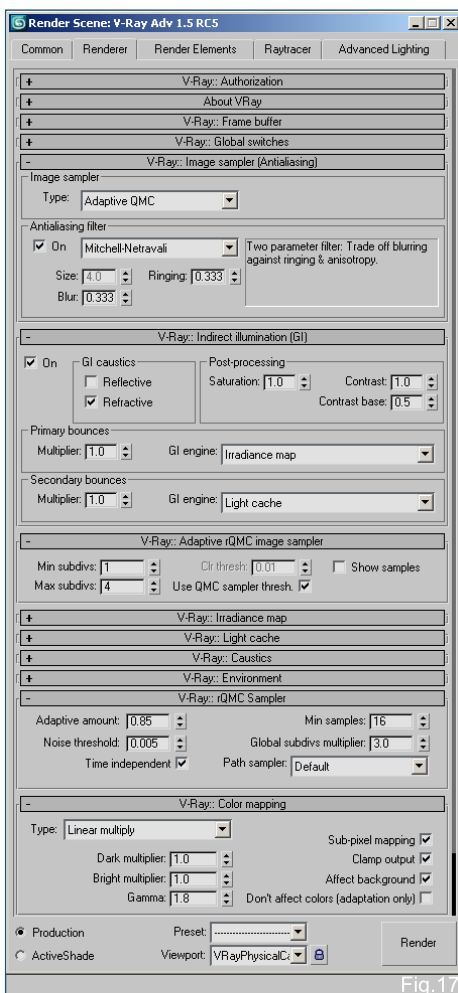


Fig.17

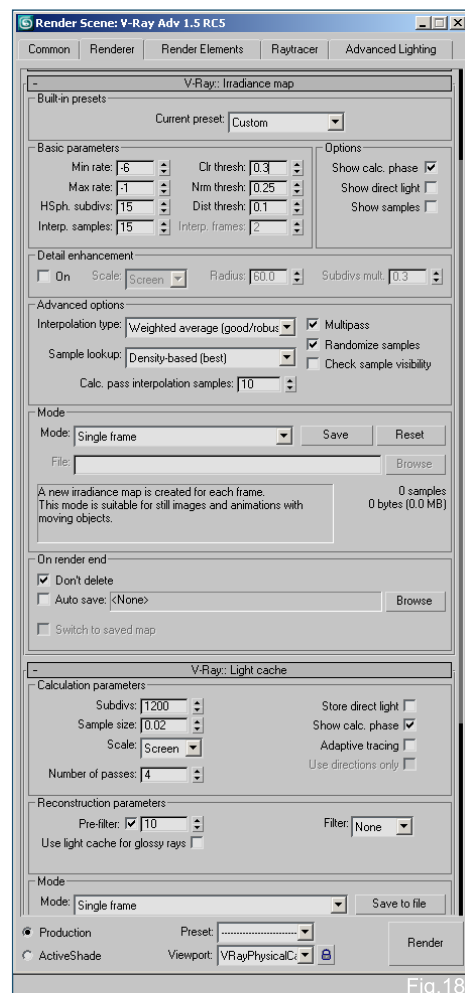


Fig.18

the saturation and finally did some colour correction to the whole image.

## CONCLUSION

I am happy to have been given the opportunity to share this "making of" with the community. I hope you have found it useful.

## GIRAFFE

For more from this artist visit:

<http://www.giraffe3d.com>

Or contact:

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# DIGITAL ART MASTERS VOLUME 2

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This month we feature:

**"Music Institute"**  
by Mauricio Santos







## MUSIC INSTITUTE

BY MAURÍCIO SANTOS



### INTRODUCTION

This image is part of my graduation project at the Architecture School of Universidade Federal do Rio Grande do Sul, southern Brazil. I believe the strength of this image is also the strength of the project itself. It relies on the original design concept. The building is a public institute focused on the development of music in Rio Grande do Sul State. The intention here was to create a public space that would fulfill professional musicians' needs, and also be friendly and open enough to bring new people into music, as well as to provide a good atmosphere where young and professional musicians could gather to socialize among themselves, and also with the general public. The design concept (Fig.01), divides the building in two main parts, one being the solid center and the other being the light exterior. The center accommodates the most technical spaces and its closed look also makes the acoustic and the ambient treatment much easier. The exterior part, on the other hand, is the interface with the street and should be responsible for bringing more people in—it's where the social activities should take place. Exploring the contrast between these two parts and playing with the touching elements, such as the walkways, the skylights and the holes in the solid concrete box, were some of the goals in the project, and this is the image that best represents them. This particular image is also significant to me as I believe I was able to show not only the project as it would probably be if it was built, but also emphasize the design values.



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Fig.01

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SCENES

### MODELING

As the main target throughout the development of this work was the design itself, the modeling step had a key role during the entire process. To manage all the complexity of the architectural project, and yet following the early concept and trying to reach interesting visuals, I made many alternatives and changes from the initial sketches. You can see some of the shapes I reached during the project development in Fig.02a-d. For those who also have the desire to enhance their design skills on the computer, I must say that speed in modeling is really important, as it gives you the possibility of innumerable tests and the option for making changes until you can be completely satisfied with the result. Lots of practice is still the best way to obtain the speed that you need. In this project, I wanted to portray a perception of the whole space and also the relationship between the parts, so I made the whole 3D model of the building in a single 3D Studio Max file, including all the furniture. This also helped in making the animation, but it resulted in a really heavy file and it became impossible to work with everything switched on, hence making the modeling a little harder in the end.

### TEXTURING

The fact that this project was developed during a whole academic semester ended up helping me a lot with the textures too. I had the chance to test the look of several different arrangements of materials (Fig.02a and d). It may sound a little too obvious, but some of the materials I first thought would look great on the project didn't achieve the effect I was aiming for. These tests made me not only change the project itself but also re-affirmed the importance of the three-dimensional visualization tools. One of the decisions taken during this testing stage was to use a rough, concrete texture on the box. The concrete had much to do with the project requirements but at first I thought that some warmer material, like wood, would look better. After testing the concrete though, I liked the effect the light had on it. This particular concrete texture map, with all its cracks, added some realism to the scene and also helped achieve the contrast I was looking for, since the other materials in the scene were pretty clean.

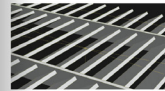


Fig.03

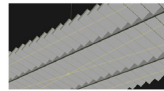


Fig.04

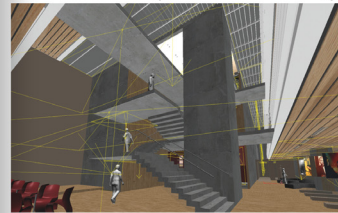


Fig.05



Fig.02a



Fig.02b

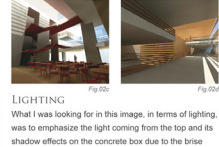


Fig.02c

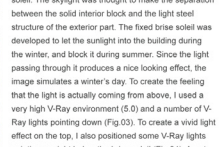


Fig.02d

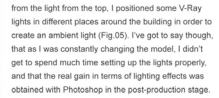


Fig.02e

Fig.02f

Fig.02g

Fig.02h

Fig.02i

Fig.02j

Fig.02k

Fig.02l

Fig.02m

Fig.02n

Fig.02o

Fig.02p

Fig.02q

Fig.02r

Fig.02s

Fig.02t

Fig.02u

Fig.02v

Fig.02w

Fig.02x

Fig.02y

Fig.02z

Fig.02aa

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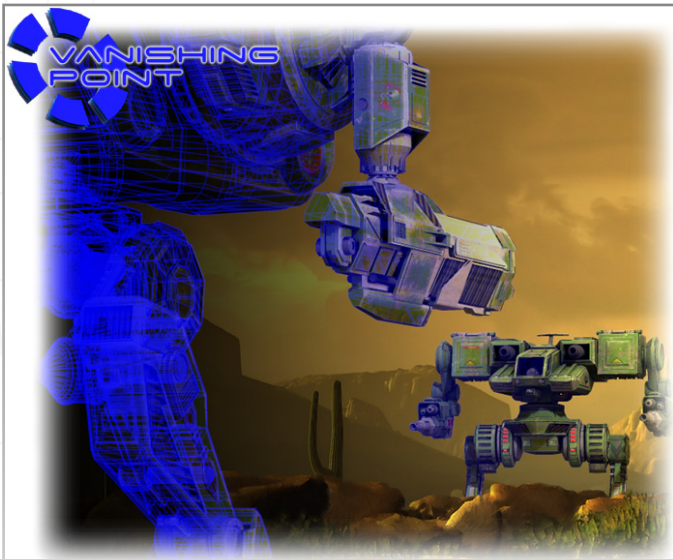


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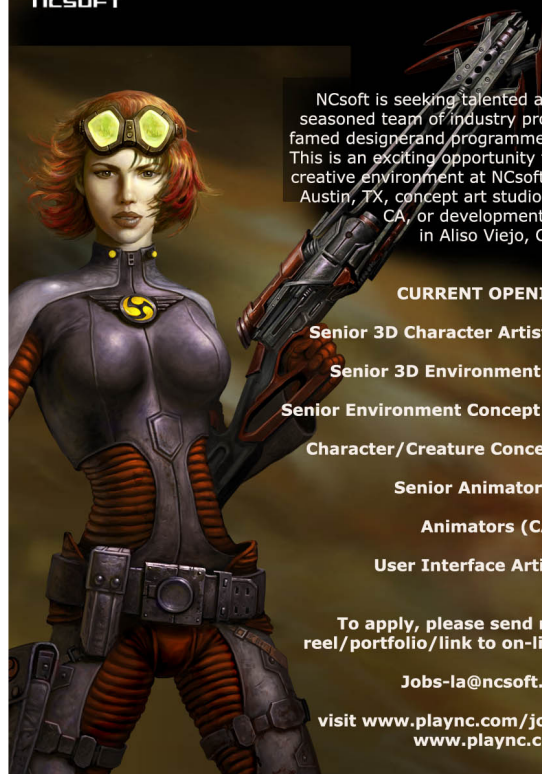
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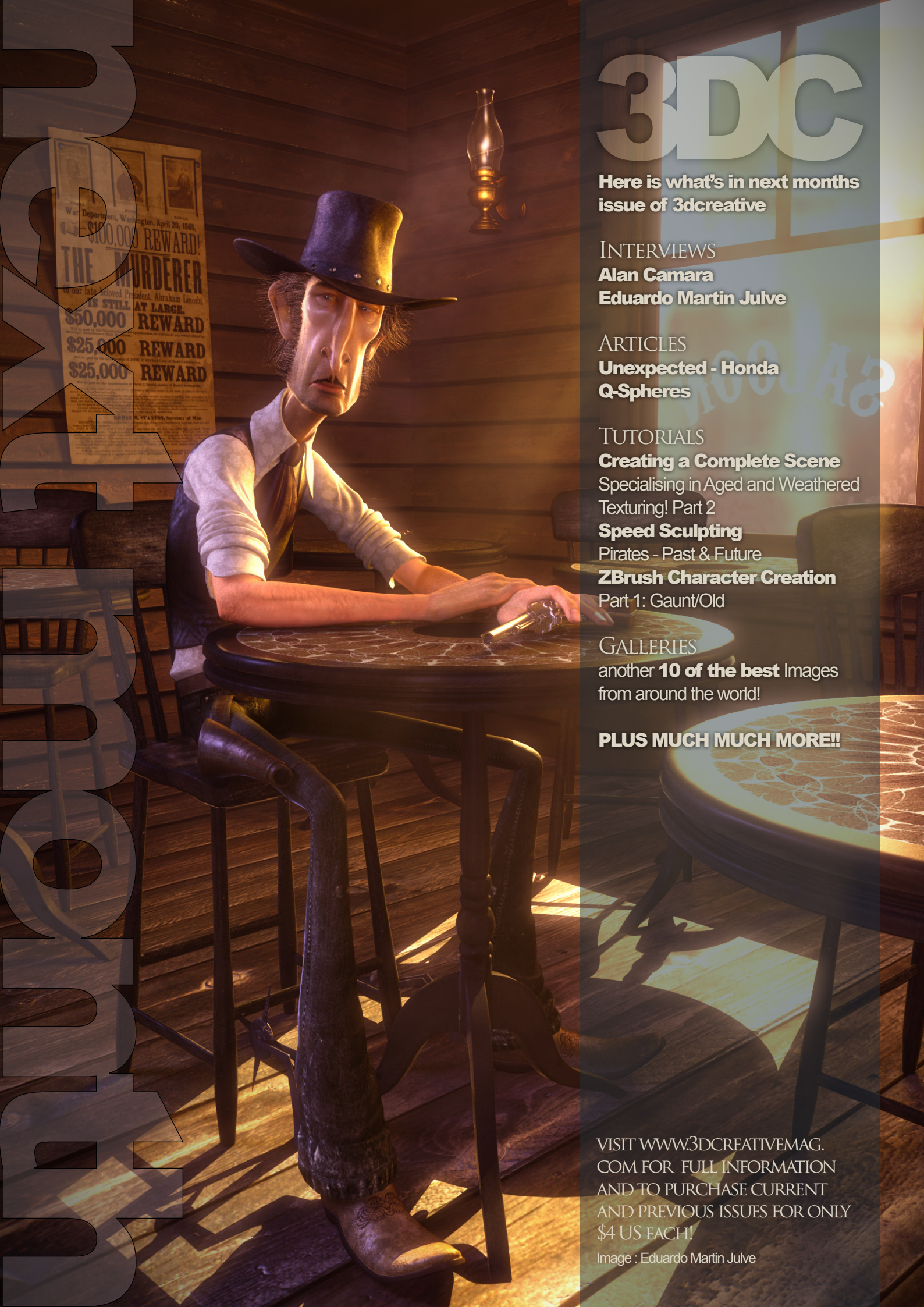
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